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NEBRASKA

DEPARTMENT OF TRANSPORTATION

ENGINEERING

Policy & Procedure Manual



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Traffic Engineering Policies & Procedures Manual



INTRODUCTION

NDOR Traffic Engineering Policies & Procedures Manual is provided as a guide for department personnel traffic studies, operation, and design. The Policies & Procedures Manual is <u>not</u> intended to be an all-encompassing document on traffic engineering. The Policies & Procedures Manual establishes some policy or procedural information and with the application of sound traffic engineering judgment, helps to establish uniform guidelines and procedures for the use of traffic control devices. The Policies & Procedures Manual is not intended to be a substitute for engineering knowledge, experience, or judgment.

The Policies & Procedures Manual should be used in conjunction with the "Manual on Uniform Traffic Control Devices" (MUTCD) issued by the Federal Highway Administration (FHWA) *and* in conjunction with the "Nebraska Supplement to the MUTCD" to promote uniform statewide application of traffic control devices. The Policies & Procedures Manual provides interpretive guidance, but does not change the requirements of the MUTCD.

The NDOR Traffic Engineering Policies & Procedures Manual is applicable to the Nebraska State Highway System and not to local roads or streets. Local jurisdictions may use the Policies & Procedures Manual as a guide if they so desire.

Documents within the NDOR Traffic Engineering Policies & Procedures Manual supersedes all previous Traffic Engineering Policies & Procedures, Technical Guidelines, and Technical Memoranda that have been previously dispersed. Except for the following NDOR Traffic Engineering Division publications and documents which remain in effect:

- Signing and Marking Standard Plans, Typicals, and Specifications
- Traffic Signals and Lighting Standard Plans, Typicals, and Specifications

If you have any questions or comments about the content of the Traffic Engineering Policies & Procedures Manual, please contact:

Nebraska Department of Roads Traffic Engineering Division 1500 Highway 2 Lincoln, NE 68509-4759 (402) 479-4594



Traffic Engineering Policy & Procedure



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Policy 201.1



ANNUAL HIGHWAY SIGNING VISUAL NIGHT TIME INSPECTION GUIDELINES

The Nebraska Department of Transportation requires Annual Visual Nighttime Inspection of all signs on State Right-of-Way that are the responsibility of the NDOT.

This inspection should take place between January 1st and March 31st of each year.

This inspection is the responsibility of the Maintenance Supervisor, accountable to the Maintenance Superintendent.

The inspection shall be recorded on NDOT Form 192 and the completed form filed with the District Office.

The inspection shall be made by two inspectors, consisting of one driver and one recorder.

In the visual nighttime inspection method, the inspectors assess the visibility and retroreflectivity of the traffic signs as they approach them. If in the judgment of either observer, the sign lacks retroreflectivity or is not adequately visible - the sign shall be replaced.

- Prior to beginning the inspection each night, the inspectors shall view the minimum retroreflectivity sign panels to train their eyes to minimum acceptable retroreflectivity levels. This viewing shall be completed in accordance with the guidelines shown in Figure 1 of this policy. Once the inspections are completed, the minimum retroreflectivity sign panels shall be removed and stored indoors in their carrying case. This is essential to ensure that the sign panels will not fade or deteriorate due to over exposure to sunlight or weather.
- The inspection is to be conducted at normal roadway operating speeds. If it is necessary to slow or stop the vehicle to read the sign, typically the sign needs to be replaced. Signs are normally inspected from the travel lane.
- The inspection is conducted using the low beam headlights. It is better not to use the bright beams for inspection as they create higher luminance levels at the sign and make it appear brighter than it would to a driver using low beams.
- Signs are normally evaluated at a typical viewing distance for each sign, one that provides a driver with adequate time to react to the sign and make an appropriate response.
- Dirty signs must be cleaned before nighttime inspection occurs.
- In the case that frost forms on signs, the retroreflectivity of each sign will be decreased. If this occurs, the inspection should be postponed until another evening.

The Highway and Reference Post of the inspected roadway shall be recorded on NDOT Form 192.

All signs (with locations) needing replacement shall be recorded on NDOT Form 192 and shall be replaced within two weeks of receipt of the replacement sign.



After the sign has been replaced it shall be recorded on NDOT Form 192.

A separate form shall be used for each highway in the supervisor's area.

Both observers will sign all completed forms and then forward them to the area Superintendent.

Upon completion, the area Superintendent will review and sign the documents and forward them to the District Operations and Maintenance Manager.



NIGHTTIME INSPECTION NOTES

1. ENSURE THE FACE OF THE SIGNS ARE CLEAN.

- 2. SELECT A TEST VEHICLE THAT HAS HEADLINGTS KNOWN TO BE COR-RECTLY AIMED.
- 3. WAIT UNTIL IT IS COMPLETELY DAR, AND THE EYES HAVE ADJUSTED TO NIGHTTIME CONDITIONS.
- 4. POSITION TEST VEHICLE SQUARELY IN FRONT OF THE SIGN PANELS.
- 5. PLACE HEADLIGHTS ON LOW BEAM SETTING.
- 6. VIEW THE TEST PANELS TO TRAIN THE EYES TO MINIMUM ACCEPTA-BLE RETROREFLECTIVITY LEVELS.

TEST PANEL INSTALLATION NOTES

 PICK A LEVEL, FLAT, SECURE LOCATION WHERE A SQUARE-ON VIEW OF THE SIGNING WILL BRE AVAILABLE AT A DISTANCE OF 100' TO 600'. GENERALLY, THE LONGER THE DISTANCE, THE BETTER.

2. SIGNS SHOULD BE MOUNTED TO FACILITATE REMOVAL TO SEURE STORAGE AFTER EACH ANNUAL SIGN INSPECTION.

REMOVE AND PROPERLY STORE SIGNS AFTER INSPECTION

FIC		HIGHWAY	SIGNING	VISUAL	NIGHT
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TIME INSPECTION GUIDELINES

ENGINEERING

Policy 201.1

Nebraska Department of Transportation Highway Signing Visual Nighttime Inspection Form

Highway:	R.P.:	to R.P.:	
Date:	Start Time:	End Time:	
nspection Driver.	Inspec	ction Recorder.	

Signs Which Need Replaced:

Highway	Location/R.P.	Sign ID	Date

All signs in the above referenced highway segment PASSED Visual Nighttime Inspection.

Sign replacement should be completed in a timely manner?

Maintenance Supervisor: Maintenance Superintendent:

Date Completed:

CC:	District Office	

NDOT Form 192, July 17

July 17 THIS IS AN EXAMPLE FORM ONLY:

Please use the copy of this form available via DOTFORMS (NDOT FORM 192) OR the copy provided in Policy & Procedure Manual Attachments for your printing and copying needs

Annual Highway Signing Visual Night Time Inspection Guidelines



Procedure.211.1



CHANGING FOUR-WAY STOP CONTROL

To change four-way STOP sign control to two-way control:

- 1. Alert local news media
- Two weeks prior to removing the STOP signs on the major route, install a W40-108a "NOTICE—THIS STOP SIGN WILL BE REMOVED (DATE)" beside the STOP sign which will be removed. Add fluorescent flags. Usually Monday morning is the most desirable time to change
- 3. On the minor route where the STOP signs will not be removed, install a W40-109a "NOTICE—CROSS TRAFFIC WILL NOT STOP EFFECTIVE (DATE)" near the STOP sign, with fluorescent flags.
- 4. Alert the local news media again during the week prior to removing the STOP signs
- 5. On the date referred to in #2 and #3, add W40-1-30 "HIGHWAY ______ TRAFFIC DOES NOT STOP" below each STOP sign in the minor road. Add two fluorescent flags above each STOP sign
- 6. Remove STOP and STOP AHEAD signs from the major route
- 7. Notify Traffic Engineering of the date of the change
- 8. The flags should remain in place for approximately six months



Procedure.211.2



ESTABLISHING FOUR-WAY STOP CONTROL

To establish four-way STOP sign control:

- 1. Alert local news media
- 2. Two weeks prior to installing the 4-way stop, install a special sign "A STOP SIGN WILL BE INSTALLED (DATE)". With fluorescent flags and flashers
- 3. One week prior to installing the 4-way stop, install covered STOP AHEAD and STOP signs
- 4. On the day the 4-way STOP is first operational, request enforcement officer assistance and uncover the signs. Add fluorescent flags and flashers to the new signs and a 4-WAY (R1-3) sign below all of the STOP signs
- 5. Add "STOP AHEAD" pavement markings on the paved approach to each new STOP sign
- 6. Add rumble strips in advance of the new STOP AHEAD signs.
- 7. Notify Traffic Engineering of the date of the change
- 8. After a month, the flashers can be removed, but the flags should remain in place for approximately six months



Procedure.212.1



PLACEMENT OF SPEED LIMIT SIGNS

Speed limit signs should be posted at the following **maximum** distances as determined by the MPH of each highway segment.

55 mph highway segments = 4 miles

60 mph highway segments = 8 miles

65 mph highway segments = 8 miles

Also Speed Reduction signs should be installed in rural speed zone transition locations. The locations of particular concern are areas where the posted speed transition does not occur at a stop controlled intersection or within corporate limits.



Policy.212.2



Urban Speed Zone Signs

In an effort to provide a greater degree of uniformity throughout the state, the following policy is established:

- 1. The first Speed Zone sign upon an approach to an urban area shall be the W3-5-36 Speed Reduction Sign.
- 2. The first Speed Limit sign in the same direction of travel shall be the R2-1-30 (30" x 36") on two-lane highways. On multi-lane highways the sign shall be the R2-1-36 (36" x 48").
- 3. All subsequent Speed Limit signs in the same direction of travel shall be R2-1-24 (24" x 30") for two-lane highways or R2-1-30 (30" x 36") for multi-lane highways, unless it is determined by an engineering review that a larger sign is needed
- 4. All Speed Reduction Signs and Speed Limit Signs shall be 48" when used on the Interstate or Freeway System.

When the speed zone reduction occurs on a four lane divided roadway, an additional speed limit sign and the speed reduction sign should be placed in the median.

Wholesale change is not required, but as speed zone signing is replaced, all new signs shall conform to the requirements stated above.



ENGINEERING

Policy.212.3

POST MOUNTED SPEED DISPLAY SIGNS

Statute:

State of Nebraska Statute 60-6,120 assigns jurisdiction for the placement of traffic control devices upon the state highway system. No local authority is authorized to place or maintain any traffic control device upon any state highway, except by permission of the Department of Transportation.

The Department of Transportation shall have final approval of all installations of post mounted speed display signs along the state highway system. All communities (including those above 40,000 in population) shall consult with the Department prior to installation of any speed display signs.

Application Criteria:

AFFIC

Municipalities, Counties or the State may use electronic speed display signs to alert travelers of their speeds to enhance conformance with the posted speed limit. Speed display signs may be considered in the following situations:

- 1. First reduced speed zone area entering a town.
- 2. Inside an established school zone or in association with a school crossing area.
- 3. At a site location where an engineering study indicates a potential benefit could be achieved from the installation of a speed display sign.

Speed Display Sign Specifications:

The signs shall have a minimum numeral display height of 12-inches for roadways with a speed limit of 40 mph or less and a minimum of 14 inches for roadways with a speed limit of 45 mph or greater. The sign shall consist of yellow or amber LED's. Red numerals shall not be displayed at any time. The sign shall only display the speed of vehicles approaching the sign. The sign shall also be capable of setting a maximum speed cut-off, to be set no greater than 25 mph over the posted speed limit. An optional flashing light/numerals or strobe for over-limit readings may be used. The use of scrolling text shall not be permitted. The signs shall be of a type and make approved by the Department of Transportation Traffic Engineering Division for such use as shown on the NDOT Approved Products List (APL). Other brands not shown on the APL may be used if they receive approval by the Department.

If a background sign panel is included with the speed display sign, it shall be constructed of white retroreflective sheeting with black "YOUR SPEED" text. Other text similar to "YOUR SPEED" may also be used, if approved. A fluorescent yellow green sign background may only be used if the speed display sign is incorporated with a school speed zone (as discussed below).

The sign and mounting system shall conform to the most current crashworthy requirements at the time of installation, e.g. NCHRP350 or MASH.



Installation & Maintenance:

Speed display signs mounted with a "SCHOOL SPEED LIMIT XX WHEN FLASHING" speed zone sign shall only operate and display vehicle speeds when the school speed zone sign is in flashing operation. All other times, the display shall be off or dark.

Speed display signs used on the highway at the entrances to a town should be placed a minimum of 200 feet after the first reduced speed limit sign. A shorter distance may be allowed when approved by the Traffic Engineering Division. Speed limits shall not be extended outside the corporate limits in order to accommodate the sign or its required spacing.

The lateral location of the sign shall be per the Manual on Uniform Traffic Control Devices. The speed display sign shall be mounted at least seven feet above the ground, on an approved breakaway mounting where required.

A regulatory speed limit sign displaying the authorized speed limit shall be installed above the speed display sign. The sign post height above the speed display sign must allow for this regulatory sign.

The project costs for Speed Display Signs, which are not a part of a "New and Reconstructed" project, will be allocated 100% to the municipality or county. The local jurisdiction will pay 100% of the cost of operating, repairing and maintaining the Speed Display Signs.

The Department shall require the City/County to obtain a permit to install the signs. A NDOT Form 42 (Application for Placement of Traffic Control Device Within State Right of Way) shall be submitted with the permit.

An electrical contractor or certified electrician approved by the state for traffic signal or roadway lighting construction shall install the signs when they are externally powered. External power, when needed, shall be installed underground to the sign. Approved solar powered signs may be used. Signs shall be installed as shown in plans approved by the state, when provided.

The local community (or jurisdiction) shall maintain the entire speed display sign installation and pay all powercosts. The local jurisdiction shall keep the speed display signs in proper working order. The Department of Transportation personnel may remove or cause to be removed non-approved, inoperative or inaccurate signs.









Policy.212.4



PORTABLE SPEED DISPLAY TRAILERS

Statute:

State of Nebraska Statute 60-6,120 assigns jurisdiction for the placement of traffic control devices upon the state highway system. No local authority is authorized to place or maintain any traffic control device upon any state highway, except by permission of the Department of Transportation.

The Department of Transportation shall have final approval of all installations of speed display trailers along the state highway system. All communities below 40,000 population must receive approval from the Department prior to installation of any speed display trailers.

Communities above 40,000 in population must consult with the Department prior to installation of a speed display trailer.

Application Criteria:

Municipalities, Counties or the State may use speed display trailers to alert travelers of their speeds to enhance conformance with the posted speed limit. Speed display trailers may be considered in the following situations:

- First reduced speed zone area entering a town.
- Inside an established school zone or in association with a school crossing area.
- At a site location where a potential benefit could be achieved from the installation of a speed display trailer.

The Department shall require the City/County to notify the District Engineer prior to any installation of the speed display trailer along the state highway system. The District Engineer may require a permit listing all locations with the dates that the speed display trailer will be installed along the highway.

Speed Display Sign Specifications:

- The speed display shall have a sign legend of "Your Speed" directly above or below the speed display.
- The signs shall have a minimum numeral display height of 14-inches, consisting of either yellow or amber LED's or retroreflective yellow flip disk with LED's. Red numerals shall not be displayed at any time.
- The sign shall only display the speed of vehicles approaching the sign.
- The sign shall also be capable of setting a maximum speed cut-off, to be set no greater than 25 mph over the posted speed limit. An optional flashing light/numerals or strobe for over-limit readings may be used.
- No other message shall be displayed from the device.



Installation & Maintenance:

- Speed display trailers may only be used at locations with a speed limit of 45 mph or lower .
- A regulatory speed limit sign that corresponded to the authorized speed limit of the roadway shall be installed above the speed display unit.
- Speed display trailers used on the highway at the entrances to a town should be placed a minimum of 200 feet after the first reduced speed limit sign.
- When deployed, the trailer shall be sighted and aligned with approaching traffic to ensure visibility of the message.
- The lateral location of the trailer shall be per the Manual on Uniform Traffic Control Devices.
- Whenever possible, speed display trailers should be placed off of any usable portion of the roadway on the right side of the roadway.
- When placed outside the clear zone, or behind a guardrail, delineation is not required. Where field conditions do not allow for this placement, the trailers may be located on the outside shoulder of the roadway.
- A minimum clearance of three feet measured horizontally from the edge of the trailer the edge of the traveled way shall be maintained at all times.
- Minimum 28" cones should be used to delineate each trailer using a 1/3 L taper. These cones should be positioned on the upstream end of the trailer to form a taper leading up to the traffic side of the trailer. The cones and trailer shall be retroreflectorized for nighttime use.
- The speed indicator measurement and display functions shall be equipped with power supply capable of providing 24 hours of uninterrupted service.

The local community (or jurisdiction) shall maintain the entire trailer installation. The local jurisdiction shall keep the speed display trailer in proper working order. The Department of Transportation personnel may remove or cause to be removed inoperative, inaccurate trailers or trailers installed without prior approval.



PORTABLE SPEED DISPLAY TRAILER (PSDT)





Policy.219.1



ENGINE COMPRESSION BRAKE / JAKE BRAKE REGULATION

On State Highway System:

Since the state has no law prohibiting the use of engine compression "jake" braking, the placement of signs prohibiting the use of "jake" or engine compression braking is a local issue.

We understand that there may be a possibility of a trademark infringement issue with using the term "Jake Brakes" but we have no firsthand knowledge of a problem. In the interest of standardization, the Department of Roads has chosen one sign legend to become the standard for any sign placed on the state highway system. Effective January 1, 2000, all future installations of engine compression braking signing **shall** have the legend "ENGINE BRAKING PROHIBITED LOCAL ORDINANCE".

If a city, village or county authority wishes to place such signs on a state highway through its jurisdiction, we will cooperate with them in that effort. Since the signs will be installed on the state highway right-of-way, we have developed the following requirements before a sign may be installed:

- a) The local authority must pass an ordinance or resolution enacting the prohibition and provide a copy to the Traffic Engineering Division office.
- b) The signs must be fabricated and furnished by the local authority according to the approved design standards attached for text size and sign dimensions. Sign must be reflective white with black legend and border. The primary message text must be a minimum of 6" for use in areas with speeds of 45 mph or above and 4" for speeds of 40 mph and under.
- c) The text must include the words "city ordinance", "county resolution", or similar text approved by the Department.
- d) The signs must be placed <u>within</u> the jurisdiction of the local authority and installed by or in coordination with the local Department of Roads maintenance staff.

Signs with alternate legends (i.e. JAKE BRAKES, COMPRESSION BRAKES) approved by the Traffic Engineering Division prior to this policy may remain in use.



Nebraska Department of Roads Approved sign designs for Engine Braking Signs





R42-1e-36



R42-1e-36 For urban areas with posted speed Limit of 45 miles per hour or greater.





Policy.222.1



SLIPPERY WHEN WET SIGNING

Slippery When Wet signs are used to advise the traveling public when pavement surface conditions are such that the presence of water may reduce the surface friction below the acceptable level for safe driving at the posted speed limit.

INSTALLATION:

Fog Seals

Slippery When Wet signs will be installed on all fog seal projects immediately upon completion. Signs may be removed no earlier than one month following the completion of the fog and then when in the judgment of the Maintenance Supervisors, the surface has returned to pre-fog seal conditions.

All Other Pavement Surfaces

Slippery When Wet signs will not be routinely installed on any segments of highway. When it is the opinion of the Maintenance Supervisors that the surface friction is questionable, Skid Testing may be requested and if the resulting surface friction numbers are below the acceptable value Slippery When Wet signs will be installed. Signs may be removed when in the judgment of the Maintenance Supervisors the surface has reached an acceptable conditions.

Skid Testing will be requested through your District Operations Manager to the Concrete Section of the Materials & Research Division at (402) 479-4677.



Procedure.222.11



TEMPORARY SLICK SURFACE SIGNS

<u>USE</u>:

Use slick surface signs (W41-46) after notification and confirmation of a temporary slick surface on the roadway due to the presence of a significant amount of foreign substance on the roadway (corn mash, grain, mud, manure, etc.), which is likely to reduce the surface friction below the acceptable level for safe driving at the posted speed limit.

INSTALLATION:

W41-46 should be installed following these guidelines:

- Place signs 200-500 ft. in advance of the substance area, and on all approaches from high volume intersecting roads.
- If warning signs are not available, use a message board for each direction with the message, "REDUCE SPEED"/ "SURFACE MAY BE SLICK" on two phases.
- Cones may be placed on the shoulder (as needed) to delineate the substance area.
- Temporary Deer Crossing Warning Signs (W11-3) may be installed while condition exists when grain spills are involved. Signs should be fluorescent orange in color.
- The condition of the roadway and sign should be checked each day to monitor progress back to acceptable conditions for safe driving at the posted speed limit. Each day's check should be documented with pictures of the roadway condition and the time the check took place.
- Signs should remain in place for a minimum of 3 days after the material has been removed or cleared from the roadway.
- After 3 days, signs may be removed when, in the judgment of the District Operations and Maintenance Manager or Hwy Maintenance Superintendent, the surface has returned to an acceptable condition for safe driving at the posted speed limit.





Procedure.222.2



PLACEMENT OF ADVANCE TRAFFIC CONTROL WARNING SIGNS

The Advance Traffic Control symbol signs include the Stop Ahead (W3-1), Yield Ahead (W3-2) and the Signal Ahead (W3-3) signs. These signs are required to be installed when the sight distance to the primary traffic control device (STOP, YIELD, or traffic signal) is not visible to the road user per table 2C-4 Condition B, of the MUTCD. This distance is based on the 2001 AASHTO Policy, stopping sight distance with a PIEV time of 2.5 seconds, a deceleration rate of 11.2 ft/sec², minus the sign legibility of 175 ft.

Therefore the only time one of these Advance Traffic Control signs is required to be installed is when the sight distance is less than the values in the table.

The Department of Roads views the distances in Table 2C-4 Condition B as the minimum criteria for the advance placement of these three warning signs. However, the Department has determined that through our years of practice, these three advance warning signs have adequately performed at much greater advance distances. With these advance signs placed further in advance than the minimum suggested in the table, it affords the driver more time to plan and initiate a response and the driver may use much less braking force to bring their vehicle to a complete stop.

The Department of Roads believes advance traffic control signs provide additional notice and emphasis of the primary traffic control device. Since Advance Traffic Control warning signs are not required at locations with adequate sight distance, the Department of Roads will typically provide greater sign spacing when these signs are installed.

Therefore it will be the Department of Roads' procedure that in rural areas, these signs may typically be installed at a distance up to 1500 feet in advance of the primary traffic control device. Distance may vary. For locations where the Department desires to place additional advance traffic control signs, signs may be placed even farther in advance of the intersection or closer to the intersection as determined by the District or Traffic Engineering.



NEBRASKA

Procedure.223.1

Placement of Speed Reduction Signs

To provide guidelines for the uniform placement of speed reduction signs in consideration of driver expectancy; to enable drivers to decelerate at a fairly uniform rate at any speed reduction zone, regardless of the amount of speed reduction or location in the state.

When used, speed reduction signs should be placed in advance of the speed limit signs based on the intended speed reduction and initial speed. The table below indicates the preferred distance between signs, and a range to accommodate field conditions.

Initial Speed	Reduced Speed	Target distance Between Speed	Acceptable
(mph)	(mph)	Reduction and Speed Limit Signs (ft)	Range (ft)
75	70	260	275-375
75	65	502	500-600
75	60	726	725-825
75	55	933	950-1050
70	65	243	250-350
70	60	466	475-575
70	55	673	675-775
70	50	801	875-975
65	60	225	225-325
65	55	430	450-550
65	50	619	625-725
65	45	789	800-900
60	55	206	200-300
60	50	395	400-500
60	45	565	575-675
60	40	718	725-825
55	50	189	200-300
55	45	359	375-475
55	40	511	525-625
55	35	646	650-750
50	45	171	175-275
50	40	323	325-425
50	35	458	450-550
50	30	574	575-675
45	40	153	150-250
45	35	287	300-400
45	30	404	400-500
45	25	502	500-600

TRAFFIC	Placement of Speed Reduction Signs
ENGINEERING	Policy 223.1

Recommended:	Traffic Engineer	Date:	
Approved:	Deputy Director - Engineering	Date:	



Policy.224.1



GRADE CROSSING ADVANCE WARNING SIGNS

This policy provides guidelines for the installation of advanced railroad warning signs. The signs shall be installed on the state highway system approaches to crossroads (municipal or county roads, and highways) where railroad tracks are near the intersection.



If the distance between the tracks and a parallel highway, from the edge of the nearest rail to the nearest edgeline of the parallel roadway, is less than 100 ft., a W10-2, W10-3, or W10-4 sign shall be installed on each approach of the parallel highway to warn road users making a turn that they will encounter a grade crossing soon after making a turn. In this case, a W10-1 sign for the approach to the tracks shall not be required to be between the tracks and the parallel highway.



If a W10-2, W10-3, or W10-4 sign is used, the sign shall be located in advance of the intersection along the highway in accordance with the guidelines in the table below. The advance placement distance is based on the speed of through traffic on the highway. The table shows values from MUTCD Table 2C-4, Condition B. The Department of Roads normally views the distances in



Table 2C-4 Condition B as the minimum criteria for the advance placement of warning signs. However, for these signs, longer distances should be avoided, because these signs apply to traffic that is going to turn, and longer distances are not beneficial.

Posted Speed	Advance Placement Distance *
20 mph	100 ft
25 mph	100 ft
30 mph	100 ft
35 mph	100 ft
40 mph	125 ft
45 mph	175 ft
50 mph	250 ft
55 mph	325 ft
60 mph	400 ft
65 mph	475 ft

• For highway junction locations, place in accordance with Junction Signing Plan or contact Traffic Engineering.

If the distance between the tracks and the parallel highway, from the edge of the nearest rail to the nearest edgeline of the parallel roadway, is 100 feet or more, a W10-1 sign should be installed in advance of the grade crossing, and the W10-2, W10-3, or W10-4 signs should not be considered for use on the parallel highway.

All signs shall be 36" x 36" or 36" diameter.

References: 2009 Edition of MUTCD , Section 8B.06, and Table 2C-4.



Procedure.224.2



BRIDGE(S) MAY BE ICY SIGNS

This policy provides guidelines for the installation of BRIDGE(S) MAY BE ICY (W40-47E) signs on the state system.

SIGN CONSTRUCTION

Ice warning signs shall be permanently mounted and of folding construction. The standard size is 36" for all conventional highways and expressways and 48" for all freeways. When signing for a single bridge the legend "BRIDGE MAY BE ICY" should be used. When signing for two or more bridges in one direction "BRIDGES MAY BE ICY" should be used.

LOW SPEED URBAN WARRANTS

Signs are not normally used in the urban environment when operating speeds are 45 mph or less. If a bridge crash history exists where ice was a contributing factor, signs may be considered, and should be cleared through Traffic Engineering before installing them. Some factors to consider include steep grades on bridges such as railroad overpasses, elevated roadway length, operating speed, bridges on curves, sign space available, and sign clutter.

Where there are higher operating speeds, the signs should be installed.

RURAL and HIGH SPEED URBAN WARRANTS

When should signs be installed?

Bridges

Signs should be installed in advance of all bridges on rural highways. When bridges are 2 miles apart or less, only the first bridge in each direction needs to be signed. A sign may be installed for the second bridge if there is crash history with ice being a contributing factor, or,

If a high volume road intersects between the bridges, and there is 1/4 mile or more to the bridge from the intersection, then signs should be installed.

But, if the distance between the two bridges is less than the advance placement distance shown in the table below, then only one sign should be installed for the two bridges.

Culverts

Signs are generally not needed for culverts. If a crash history relating to icing over a culvert exists, then signs may be installed for the culvert.





Procedure.224.2



BRIDGE(S) MAY BE ICY SIGNS

Where to place the signs?

All highways

Place a sign for each direction of travel. Locate ahead of the bridge according to the table below.

Speed (mph)	Optimum Sign Advance Placement Range (feet)	
75	600 - 1000	
55-65	400 - 700	
45-50	150 - 300	

When to display?

The signs should be opened to display the message no later than October 15th of each year, and closed no sooner than April 15th.



Procedure.226.2



Animal Crossing Signs

Conflicts between vehicles and animals on State highways involve many different types of animals ranging from livestock (cattle, horses) to wild game (deer, pheasant, turkey). These conflicts tend to be localized within regions.

Where several animal/vehicle conflicts have been documented, animal warning signs may be installed for the predominant type of animal involved in the conflicts. Deer (W11-3) and cattle (W11-4) symbol signs may be installed when one of these animals is the predominant type of animal involved in the conflicts. When another type of animal is the predominant animal involved in the conflicts, the deer or cattle symbol sign may be used to warn motorists of wildlife or livestock, respectively.

Distance plaques bearing NEXT X MILES (W25-8G) should be installed beneath animal warning signs. The lengths displayed on the plaques should be in multiples of five miles. The spacing of successive signs on sections more than 20 miles long may be 5, 10 or 20 miles, depending on local conditions.

Passive warning signs which are up all year around do not have a major effect on reducing animalvehicle crashes, since motorists tend to ignore them in the absence of evidence, such as an animal carcass. The most effective types of warning signs are ones reinforced by the driver actually experiencing the potential danger (constant hazard = a sharp curve vs. sporadic hazard = animal crossings). These passive warning signs usually result in little adjustment in travel speed, particularly when motorists are familiar with the area.

Therefore, to maintain an effective warning sign system, the use of animal warning signs shall be limited to those locations with a history of animal accidents. A traffic engineering evaluation shall document the need, location, type of animal warning sign, and appropriate distance plaque to be erected.

The following guidelines should be used to determine the appropriate location to install DEER CROSSING (W11-3) signs:

- If the accident rate of a 1-mile stretch of highway is greater than 3 deer related accidents per year for an average of 5 years
- If the accident rate of a single location (i.e. bridge) is greater than 5 deer related accidents per year for any 1 year period.



Policy.230.1



MISCELLANEOUS GUIDE SIGNING REQUESTS

Directional guide signs may be considered for public facilities which generate a significant volume of traffic that is unfamiliar with the local area. Only non-profit facilities are eligible for directional guide signing unless specifically included in these policies.

Non-essential directional guide signs can reduce the effectiveness of other more important guide signs by overloading the driver's capacity to receive and make decisions on visual messages. For this reason criteria have been developed for consideration of highway signing. However, satisfying the criteria does not assure that guide signs will be approved and installed.

It is impossible to sign for all destinations, turnoffs, or local points of interest, and drivers must be expected to make reasonable preparation for locating their destination. Normal destination signing provides the complementary information necessary for their success.

Drivers are expected to have information that is readily on State road maps or on more detailed street maps of metropolitan areas. They are also expected to relate their destination to the appropriate street name or number, community, or other destination associated with the highway turnoff.

It is the policy of the Department of Roads, that the following will **not** be provided directional guide signing within the State Highway System. However they may be eligible for privately owned signs placed off the State Right-of-Way, for additional information on privately owned signs contact the District Permit office in one of the Eight District Offices.

- Churches
- Libraries
- Clubs/Club-owned properties (Isaac Walton)
- Private Camps (Church, Scout, or YMCA)
- Elementary schools
- Shopping centers and malls
- Public buildings (post offices, court houses)
- Privately-owned museums

- Privately-owned cemeteries
- Private businesses
- Casinos
- Subdivisions
- Civic Centers
- Community Centers
- Private or Public Golf Courses
- Swimming Pools



Policy.230.2



POPULATION SIGNS

Local community population signs will be installed at or near the corporate limits along the State Highway System for all incorporated communities in Nebraska with populations under 40,000. Community Population signs will not be installed along the Interstate or Freeway systems. However, "_____ City Limit" signs may be installed in place of population signs. By state statute, communities over 40,000 population are responsible for traffic control signing for their community, therefore NDOR will not provide or install population signs for these communities.

The Nebraska Department of Roads will NOT automatically update all population signs with the completion of a new U.S. census. Population signs may be updated if requested by a community and will be updated when the sign is in need of replacement. If the sign is to be updated, the District should determine if a decal overlay is needed or a full sign replacement. If one population sign is updated to new population numbers, all signs for that community should also be updated.

When determining what value to display on the population signs, the Department will only allow either the official U.S. Census population numbers or the Nebraska Tax Commission Census update population numbers. Annual census estimates will not be considered.



Policy.230.3



COMMUNITY WAYFINDING SIGNS

According to the Manual on Uniform Traffic Control Devices (MUTCD), community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other road users to **key** civic, cultural, visitor, and recreational attractions and other destinations within a city, local urbanized, or downtown area. Community wayfinding guide signs are a type of destination guide sign for conventional roads with a common color and/or identification enhancement marker for destinations within an overall wayfinding guide sign plan for a particular area. Business names or logos, commercial graphics, or other forms of advertising shall not be used on community wayfinding guide signs or sign assemblies.

The Nebraska Department of Roads (NDOR) may allow a community to place and maintain wayfinding guide signs on the state highway system if the signs comply with the requirements of the MUTCD (presently found in Section 2D.50 in the 2009 Edition,) and if the NDOR has approved the proposed destinations, sign design, and sign locations in advance of the placement of the signs. Wayfinding guide signs shall not be allowed on Interstate Highways or on Freeways, including ramps.

Because wayfinding signs are lower priority devices, the NDOR reserves the right to reject any request for the placement of wayfinding signs on the state highway system at its sole discretion.

- Community wayfinding signs shall be limited to "key" or major non-profit attractions or destinations. The following are examples of the types of destinations allowed to be included on a community wayfinding sign:
 - Public Park
 - Community Center
 - College or University
 - City Hall
 - Scenic Overlook
 - Historic Property
 - Recreational Lake
 - Performing Arts Center
 - Regionally Recognized Art Museum

At locations where a community obtains approval to place a community wayfinding guide sign any existing guide sign provided by NDOR for the same destination will be removed.

 Community wayfinding signs shall only be placed within the community's corporate limits. Thus, NDOR will not allow an initial wayfinding sign to be placed outside the corporate limits for attractions within the city limits. A community may, with prior approval of NDOR, install wayfinding signs within its corporate limits for an attraction located outside its corporate limits, if the destination is within the community's zoning jurisdictional boundary.



Policy.230.3



COMMUNITY WAYFINDING SIGNS

- Wayfinding signs shall conform to the requirements of the MUTCD. Design features that must be met from the MUTCD include:
 - Text size
 - Arrow size and shape
 - Number of destinations per sign (3 recommended; no more than 4 rows will be allowed)
 - All wayfinding signs intended for vehicular traffic shall be retroreflective
 - Pictograph size
 - Background color
- All sign locations and proposed destinations shall be reviewed and approved by the appropriate District Office. All sign designs and destinations shall be submitted to and reviewed and approved by the Traffic Engineering Division.
- The cost to manufacture, install and maintain community wayfinding signs shall be the responsibility of the community.
- Prior to installation, the community shall contact One-Call and NDOR to check for the location of underground utilities.
- If signs are installed within the highway clear zone, all sign mountings shall be crashworthy according to National Cooperative Highway Research Program (NCHRP) Report 350 or Manual for Assessing Safety Hardware (MASH) guidelines.
- In speed zones of 40 mph or lower, a community wayfinding sign shall be placed no closer than 100' from any other existing traffic control device. In 45 mph or greater speed zones, there shall be a 250' space between the guide sign and any other traffic control device.
 - Community wayfinding guide signs shall not be installed in a position where they may obscure the road users' view of other traffic control devices.
 - Because regulatory, warning, and other guide signs have a higher priority, community wayfinding signs shall not be installed where adequate spacing cannot be provided between the community wayfinding sign and other higher priority signs.
 - A wayfinding sign shall not be allowed in any area where, in the sole discretion of NDOR, sign clutter exists or will exist with the addition of any additional signs.
- The placement of a wayfinding sign by any community with a population of more than 40,000 residents, shall comply with the MUTCD and this policy after advance consultation with NDOR.



Policy.230.3



COMMUNITY WAYFINDING SIGNS

- NDOR may require the community to replace or remove a sign that falls below minimum acceptable conditions.
- The community must acknowledge, in writing, that the installation of these signs does not confer any vested interest in lands of the public; and where NDOR deems it necessary to remove such signs in order to improve its highway and right-of-way, community wayfinding signs will be removed, and when appropriate, replaced by the community at no cost to the State.
- The community shall remove any sign within 10 days after receiving written notice for its removal from NDOR. In order to obtain a permit the governing body of the community must authorize the proper official of the community to enter into a written agreement with NDOR stating, among other things, that the community grants NDOR the right to remove any community wayfinding sign on or visible from a State highway, whenever NDOR determines that (a) the sign or signs do not conform to this policy; (b) the sign or signs do not conform to the sign or signs in good repair; or (d) the sign or signs must be removed for the placement of a higher priority traffic control device.
- NDOR shall make a good faith effort to notify the community that it will be removing a sign for any of these reasons.

Community Wayfinding Sign Duties and Responsibilities

- 1. Communities interested in Wayfinding signs should first contact their respective **District Engineer** or **Traffic Engineering Division**.
- The Traffic Engineering Division will review the proposed sign design to ensure it adheres to the principles in the MUTCD and their policy. To facilitate the review, the community shall provide NDOR with proposed sign designs that include the dimensions of signs, text, borders, pictographs, etc.
- 3. Upon approval of the sign designs, the **community** shall provide a map showing an overall plan of the wayfinding signs they plan on installing. The **community** shall also provide maps for each individual sign showing the location and distances of wayfinding sign and all other signs/ driveways within the vicinity. See the following sheet for an example.
- 4. Upon receipt of the location plans, the appropriate **District** will review the sign locations to ensure proper spacing with other signs/ traffic control devices.
- 5. Upon successful completion of these steps, the **community** will enter into an agreement with NDOR for the installation of their wayfinding signs.




Procedure.231.1



ROUTE MARKER SIGNS

Highway Route Markers should be installed on the State Highway System in accordance with the following criteria:

- 1. After the junction of two State Highways for traffic traveling away from the junction. (These signs are normally shown on the highway junction signing plans issued from Traffic Engineering.)
- 2. Outside the corporate limits of a community for traffic leaving the community
- 3. At the intersection of hard surfaced county roads with the State Highway System for traffic traveling away from the intersection.
- 4. At the intersection of major graveled county roads with the State Highway System for traffic traveling away from the intersection.
- 5. At 5-mile increments. Applicable to rural locations where a driver would not have seen a route marker for a distance of 5 miles. This distance may be increased up to 10 miles in rural areas where county road intersections are greater than 5 miles apart.



Policy.234.1



LOCAL ROAD STREET NAME & RURAL STREET ADDRESS SIGNS

State of Nebraska Statutes 60-6,120 assigns exclusive jurisdiction for the placement of traffic control devices upon the state highway system to the Nebraska Department of Roads, excluding those cities with 40.000 or more inhabitants. In addition no local authority shall place or maintain any traffic control device upon any highway, except by permission of the Department.

A. Local City and County Street Name Signs

- 1. Expressway System
 - a. On the rural 4-lane divided expressway system (non-freeway segments) NDOR will furnish and install advance street names signs for officially designated local roads.
 - b. The sign will be placed in the median or shoulder in advance of the local road.
 - c. The sign will be white on green with 8-inch upper/lower case lettering.
 - d. NDOR will not sign private access drives that only serve private residences.
- 2. Two-Lane Highways
 - a. Local road street name signs should normally be placed outside of the State ROW along the local road right-of-way. (optional locations and criteria see A-3)
 - b. Lettering on post-mounted Street Name signs should be composed of initial uppercase letters at least 6 inches in height and lower-case letters at least 4.5 inches in height conforming to the Manual on Uniform Traffic Control Devices (MUTCD).
 - c. All street name signs shall be retroreflective material meeting the requirements of ASTM D 4956 for Type IV sheeting.
- Pursuant to LB 853 Section 17(2006), local City or County authorities may place and maintain road or street name signs on existing NDOR sign supports provided highway visibility is not impaired. The local City or County authorities may also place and maintain local road street name signs and supports within the State ROW provided highway visibility is not impaired.

The following guidelines shall be used for any local authority that wishes to place and maintain road street name signs within the jurisdiction of the Department of Roads:

TRAFFIC LOCAL ROAD STREET NAME & RURAL STREET ADDRESS SIGNS

Policy.234.1

- a. The local authorities must notify and cooperate with the NDOR District office prior to placing any signs within the State ROW.
- b. The local road street name signs shall be retroreflectorized with ASTM D 4956 Type IV sheeting (minimum) with retroreflective white letters on green backgrounds and show the same shape and color both day and night.
- c. The local road street name sign shall comply with the recommended letter heights as described in section 2D.43 of the MUTCD.
 - i. Lettering on post mounted street name signs should be composed of initial upper-case letters at least 6 inches in height and lower-case letters at least 4.5 inches in height.
 - ii. On multi-lane highways with posted speed limit greater than 40 mph, the lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 8 inches in height and lower-case letters at least 6 inches in height. (compliance date: December 22, 2018)
 - iii. For local roads with posted speed limits of 25 mph or less, on post-mounted Street Name signs may be composed of initial upper-case letters at least 4 inches in height and lower-case letters at least 3 inches in height.

Existing City or County owned street name signs (signs that have been manufactured by the City or County and are part of the existing stock) or signs installed prior to January 2012 may have a **minimum** of 4 inch lettering.

- d. Only Federally approved highway fonts may be used on the signs. If a pictograph is used, the height and width of the pictograph shall not exceed the upper-case letter height of the principal legend of the sign, and shall be located to the left of the sign.
- e. Per the MUTCD road or street name signs may be placed above regulatory, STOP or YIELD signs. Street name signs shall not be placed with route markers or other directional signs.
- f. Street name signs to be placed on NDOR supports **shall** be placed above the NDOR signs using brackets provided and maintained by the local agency. Minimum mounting height shall be 7 feet.
- g. When installing the local street name signs, the local agency may not in any way alter or obstruct any other traffic control device installed by the NDOR.
- h. NDOR or the local agency may not lower the NDOR sign to provide a mounting support.

TRAFFIC LOCAL ROAD STREET NAME & RURAL STREET ADDRESS SIGNS

Policy.234.1

- i. NDOR will not change sign support types to accommodate street name signs.
- j. For street name signs placed within the state ROW, not on NDOR posts, the local authority shall provide, place, and maintain sign posts, supports that have been approved for breakaway requirements by the Federal Highway Administration and National Cooperative Highway Research Program (NCHRP), Report 350 or Manual for Assessing Safety Hardware (MASH). Minimum height to the bottom of the sign shall be 7 feet.
- k. Street name signs will **not** be allowed at intersections with interchange exit ramps
- I. Posts shall be placed outside the lateral clear zone of the highway. No post shall be installed that will prevent the NDOR mowers from fitting between another sign or other post.
- m. The local authority shall assume all responsibility and liability for signs, posts, and mounting brackets they install within the state highway ROW. The State shall not be liable in any way to local authorities for signs damaged by the traveling public.
- n. The local authority shall assume all responsibility and liability for utility locates and damage.
- o. The local authority shall notify One Call (800-331-5666) and the NDOR District Office maintenance yard a **minimum of 48 hours** prior to placing any posts.
- p. The local authority shall provide traffic control for the installation of any sign within the State ROW in compliance with the MUTCD. At no time shall the work activity occupy or encroach onto a lane of highway traffic.
- q. NDOR will not be responsible for the construction, maintenance, or repair of any city or county local street name signs.
- r. City or County street name signs that are damaged, become non-reflective, or otherwise are unacceptable shall be removed or replaced by the local authority. NDOR may remove signs that are damaged, non-reflective or otherwise unacceptable as determined by NDOR.

B. Rural Street Address Signs

Rural Expressway and Two-Lane Highways

1. The County may install street address signs (i.e. 911 rural address signs) inside the State ROW for the purpose of improved identification of rural addresses. Signs may be installed only on rural two-lane and four-lane expressways, and shall not be installed on freeways or interstate.



Policy.234.1

- 2. The County must first request permission in writing from the Department of Roads District Engineer.
- 3. The street address signs shall be furnished and installed by the County, the sign shall be retroreflectorized and comply with the MUTCD.
- 4. The address signs shall be located a significant distance from the highway, at a minimum behind the driveway ditch culvert (residential side of culvert) or beyond the highway clear zone (typically 30 feet), or at the edge of State ROW..
- 5. The posts used for the signs shall be lightweight (2 lbs/foot delineator type post) and yield upon impact.
- 6. The street address signs shall not be installed on mailbox posts or other NDOR devices.
- 7. The County assumes all responsibility and liability for the address sign and post installation. This includes utility locates.



Policy.236.1



RADIO INFORMATION SIGNING

Effective October 2001 the Nebraska Department of Roads with the Nebraska State Patrol activated the state wide 511 System for both weather and roadway information. As part of the State's commitment to the new 511 System, it was determined that the previous method of signing radio station frequencies would no longer be used by the Department of Roads. All existing weather information signs showing "Tune Radio to ______ for Information" should be removed.

This policy ends the Department of Roads previous policy of providing radio information signing along the interstate and state highway system. See "Policy.236.2 - 511 System Signing" for further information.

Radio Information Signing



Policy.236.3



ALTERNATIVE FUEL SERVICE

It is expected that conventional fuel services are available in most urban areas and where standard motorist service signs have been installed in rural areas. Availability of alternative fuel services, however, is likely to be infrequent.

To provide a uniform policy for providing alternative fuel signing along the State Highway and Interstate System, the following criteria shall apply:

- A. Interstate and Full-Access-Controlled Freeways, rural or urban:
 - The alternative fuel station must be open for business at least twelve (12) hours per day, seven (7) days per week.
 - The station must be located within three (3) miles of the interchange and must be visible from the crossroad accessed from the interchange. If no qualified station exists within three miles of the interchange, then qualified stations within the next successive three mile increment may be included.
 - Alternate fuel stations located more than six miles from the interchange shall not be eligible for signing.
 - Alternative Fuel signs will not be installed on urban interchanges.
- B. Non-Interstate/Freeway State Highway System, rural or urban:
 - The alternative fuel station must be open for business at least twelve (12) hours per day, seven (7) days per week.
 - The station must be located within three (3) miles of the State Highway in rural areas, and within one (1) mile of the State Highway when located within the corporate limits of a municipality. Alternative fuel stations located further than these distances will not be eligible for signing.
 - Stations which are clearly visible from the highway will not qualify for signing
 - Only one sign will be installed for each direction of travel on the State Highway System at the intersection of the roadway providing the most direct routes to the station. However, if in the Department of Road's opinion the area or location of the sign causes road clutter the sign will not be allowed.
- C. Where alternative fuel services are not visible from the interchange or intersection, the controlling authority must install follow-through (trailblazer) type signs to the station. The trailblazer signs shall consist of a reduced size service sign and an appropriate arrow.
- D. The alternative fuel motorist service signs will be developed by the Traffic Engineering Division of the Nebraska Department of Roads to comply with MUTCD guidelines.



- E. Alternative fuel service stations must clearly display the type of alternative fuel provided at the station to the drive-by traveler. NDOR will not install signs to direct travelers directly into the drive of the service station.
- F. The following alternate fuels will be considered for signing:
 - E-85
 - Compressed Natural Gas
 - Propane Auto Gas

Other alternate fuels may be considered upon review by the Traffic Engineer.

On rural conventional highway and rural Interstate routes, alternative fuel service signs shall be permitted on approved LOGOS sign installations. Such installations shall follow all pertinent rules and regulations that apply to the LOGOS program.

When an interchange has LOGOS signing, the Department of Roads will not provide any additional alternative fuel signing. A station participating in the LOGO program may display a supplemental message inside their LOGO panel such as "ALTERNATIVE FUELS" per Nebraska Specific Service Signing Program. Alternative Fuel Signs will not be placed at urban freeway interchanges where LOGO signs are not permitted.

Recommended	I: Traffic Engineer	Date:	8-6-13
Approved:	Khaling Z	Date:	8_13_20/3

Alternative Fuel Service

Revised: 8/5/2013 Page 2 of 2



Policy.237.2



MEMORIAL SIGNING IN STATE REST AREAS

The following provides Nebraska Department of Roads policy for placing memorials in state rest areas. The office of primary responsibility for this is the Operations Division. Memorials may be placed in a state rest area in honor of an individual, group, or event.

- 1. A request to place a memorial in a state rest area must be made by written correspondence from an official representative of a recognized organization to the Department of Roads.
- 2. The honored individual, group, or event must be of substantial importance or significance, and must have contributed to the betterment of Nebraska.
- 3. A request will be made to the District Engineer responsible for the rest area involved. The District Engineer will consult with the Operations Division to determine if an appropriate location is available for the memorial in the state rest area.
- 4. The District Engineer will refer the request with his/her recommendation to the Director-State Engineer, who will make the final decision.
- 5. The Operations Division will determine the type, size, material make-up, location, and mounting method for the memorial.
- 6. The cost of the memorial shall be borne by the requesting organization. State maintenance forces may do the installation.
- 7. Replacement and repair costs necessary to maintain the memorial will be borne by the requesting organization. An agreement will be prepared to delineate responsibilities prior to installation.
- 8. Any memorial not properly maintained shall be subject to removal by state maintenance forces.
- 9. The Department of Roads will not place signs on the interstate or other state highways in order to identify or direct traffic to a memorial which has been placed in a state rest area in accordance with the procedures outlined in paragraphs one through eight above.
- 10. Memorials in rest areas will not be identified on the state map.
- 11. State rest areas are officially named as listed on the following page.

MEMORIAL SIGNING IN STATE REST AREAS

Policy.237.2

Official Names for Rest Areas Along Interstate 80			
DISTRICT	Rest Area Name	MILE POST	
2	Melia Hill W.B.	431.6	
1	Platte River E.B.	425.0	
1	Blue River E.B.	381.2	
1	Goehner W.B.	375.5	
4	York W.B.	355.2	
4	York E.B.	350.8	
4	Grand Island W.B.	316.5	
4	Grand Island E.B.	314.9	
4	Kearney W.B.	270.9	
4	Kearney E.B.	269.0	
6	Cozad W.B.	227.4	
6	Cozad E.B.	226.7	
6	Brady E.B.	194.3	
6	Brady W.B.	193.7	
6	Sutherland W.B.	159.9	
6	Sutherland E.B.	159.6	
6	Ogallala W.B.	132.5	
6	Ogallala E.B.	124.6	
5	Sidney W.B.	61.3	
5	Sidney E.B.	51.4	

Official Names for Rest Areas Along Other Highways

DISTRICT	Rest Area Name	HIGHWAY	MILE POST
7	McCook	US-6	89.1

RAFFIC

ENGINEERING



Policy.238.1



FAIRGROUND SIGNS ON STATE HIGHWAY SYSTEM

The Nebraska Department of Roads will provide guide signs on the State Highway System other than the Interstate and Freeways for County Fairgrounds which meet the following criteria:

- 1. The fairgrounds must be the designated County Fairground site and host the Annual County Fair.
- 2. The fairgrounds must be within five miles of a state highway in rural areas, and within two miles of the state highway when the sign or facility is located within the corporate limits of a municipality.
- 3. Facilities that are visible from the state highway will not be considered for highway signing.
- 4. Signs will be erected for both directions of travel on the State Highway routes at the intersecting streets or roadways providing the most direct routes to the facility. However, in congested areas or locations where limited space is available for sign placement, sign clutter may occur. If sign clutter conditions exist or would be created by the additional signs, such signs will not be erected.
- 5. When required trailblazer type signing from the State Highway to the facility will be installed along the route, and at all intersections where the direction of the route changes, or where it might be questionable as to which roadway to follow. The locations of the trailblazer-type signs shall be determined by the Department of Roads District Personnel, however, the signs shall be acquired, installed, and maintained by the agency that has jurisdiction for the maintenance of the roadway. All necessary trailblazer signs shall be installed prior to the installation of the guide signs on the State Highway System.
- 6. The sign legend will read "FAIRGROUND" with an appropriate arrow. Signs will be developed by the Traffic Engineering Division of the NDOR to comply with MUTCD guidelines.



Policy.238.2



SPORTS COMPLEX SIGNS ON STATE HIGHWAY SYSTEM

Certain types of sports complexes or athletic fields may warrant signing with minimal traffic volume criteria. The Nebraska Department of Roads will provide guide signs on the State Highway System other than the Interstate and Freeways for sports facilities which meet the following criteria:

- 1. The facility must be a public or a non-profit institution which regularly hosts athletic events attended by participants from outside the immediate community or metropolitan region.
- 2. The facility must be of sufficient size to host multiple events (games or matches) simultaneously such as 4 baseball/softball fields or 4 soccer/football fields or 8 tennis courts.
- 3. The facility must have adequate parking and restroom facilities.
- 4. The facility must be within five miles of a state highway in rural areas, and within two miles of the state highway when the sign or facility is located within the corporate limits of a municipality.
- 5. Facilities that are visible from the state highway will not be considered for highway signing.
- 6. Signs will be erected for both directions of travel on the State Highway routes at the intersecting streets or roadways providing the most direct routes to the facility. However, in congested areas or locations where limited space is available for sign placement, sign clutter may occur. If a sign clutter conditions exists or would be created by the additional signs, such signs will not be erected.
- 7. When required trailblazer type signing from the State Highway to the facility will be installed along the route, and at all intersections where the direction of the route changes, or where it might be questionable as to which roadway to follow. The locations of the trailblazer-type signs shall be determined by the Department of Roads District Personnel, however, the signs shall be acquired, installed, and maintained by the agency that has jurisdiction for the maintenance of the roadway. All necessary trailblazer signs shall be installed prior to the installation of the guide signs on the State Highway System.
- 8. Typical city parks with 1 or 2 ball parks, tennis courts etc. will not be eligible for signing; however they may be considered for "CITY PARK" signs.
- 9. The sports facility signs will be developed by the Traffic Engineering Division of the NDOR to comply with MUTCD guidelines.
- 10. At any time the sports complex or athletic fields do not meet the above criteria for three consecutive years NDOR will remove the signs.



Policy.238.3



PRIVATE CAMP & CHURCH CAMP SIGNING

Since it is not possible to provide signing for every possible destination that requests highway directional guide signs, the Nebraska Department of Roads has made an effort to provide in a fair and consistent manner the guidance motorists need most.

Classification of Private Camps would include, but would not be limited to: Scout Camps, Church Camps and YMCA Camps. These camps are considered private and not open to the general traveling public for everyday camping. For these reasons, it is the policy of the Department of Roads, that these camps will **not** be provided directional guide signing within the State Highway System.

Private Camps may be eligible for privately owned signs placed off the State Right-of-Way, for additional information on privately owned signs contact the District Permit office in one of the Eight District Offices.



Policy.238.4



MUSEUMS & ATTRACTIONS

In recognizing the importance of helping to preserve our cultural heritage, and to provide information which will enable both the resident and itinerant traveler to find and enjoy the many cultural sites and museums within the State, the Nebraska Department of Roads will provide guide signs on the State Highway System other than the Interstate and Freeways for museums & attractions which meet the following requirements:

- 1. The site or museum must be a non-profit institution of significant historical or cultural interest, as determined and approved by the State Historical Society and available for public viewing. Examples of such institutions include, but are not limited to, museums, historic sites, zoos, arboreta, science and nature centers.
- Museums shall be open 6 days a week for a minimum of 32 hours per week. Museum hours must be posted at the main entrance. Museums operating on a seasonal basis will have all signs removed or covered during the off-season unless there are outdoor exhibits or buildings that would be of significant interest to the traveling public.
- 3. The museum or attraction must have adequate parking and restroom facilities.
- 4. The museum or attraction shall be within five miles of a state highway in rural areas, and within five miles of the state highway when located within the corporate limits of a municipality.
- 5. Signs will be erected for both directions of travel on the State Highway routes at the intersecting streets or roadways providing the most direct routes to the site or museum. However, in congested areas or locations where limited space is available for sign placement, sign clutter may occur. If a sign clutter condition exists or would be created by the addition of signs, such signs will not be erected.
- 6. Trailblazer-type signing from the State Highway to the museum or historical site will be installed along the route, and at all intersections where the direction of the route changes, or where it might be questionable as to which roadway to follow. The location of the trailblazer-type signs shall be determined by the Department of Roads; however, the signs shall be acquired, installed, and maintained by the agency that has jurisdiction for the maintenance of the roadway. All necessary trailblazer signs shall be installed prior to the installation of the guide signs on the State Highway System.



- 7. The guide signs provided in rural areas will be constructed of 6" white letters displaying the name and distance to the museum or attractions, on a green background. Within the corporate limits of a municipality, the sign legend will be constructed of 4" letters, and the distance to the museum or historical site will be omitted. Three-inch letters will be permissible in low speed areas where space is limited.
- 8. Sign clutter is a condition that exists when the information intended to be conveyed to a motorist traveling at the prevailing speed at any location on any roadway exceeds the ability of the motorist to see, select, understand, and react in a safe and efficient manner to his/her vehicle operation. Consideration must be given to sign spacing, text size, messages per sign, geometric configuration of the roadway, and the visual abilities of the older driver.



Policy.238.5



ARBORETUM, BOTANICAL GARDENS, PRAIRIES, NATURE CENTERS, & OTHER NATURAL ATTRACTIONS SIGNING

To assist motorists wishing to visit the many attractions within the state, and in recognizing the importance of helping to preserve our natural resources, the Nebraska Department of Roads will provide Brown and White guide signs on the State Highway System other than the Interstate and Freeways for natural attraction sites which meet the following requirements:

- 1. The Site or Center must be operated by non-profit institution of significant regional or national interests.
- 2. The Site or Center must be open a minimum of 6 days per week and 32 hours per week, year round.
- 3. The Site or Center must have a visitor informational center or interpretative center of significant size to be considered for highway signing. A center with no such informational center will not be considered for signing.
- 4. The Site or Center must have a well defined walking or interpretative path.
- 5. The Site or Center must have adequate off street parking.
- 6. Only one sign will be installed for each direction of travel on the State Highway system at the intersection of roadway providing the most direct routes to the Site or Center. However, if in the Department's opinion the area or location of the sign causes road clutter then a sign will not be allowed.
- 7. Trailblazer type signing from the State Highway system to the Site or Center (if required) must be installed by the County or other agency with jurisdiction of the roadway prior to the department installing a sign on the highway.

Our guidelines are established to prevent excessive and unnecessary signing throughout the State Highway System. Without these guidelines, the potential for virtually every natural attraction that is considered of interest would request highway signing.



Policy.238.6



RURAL RETREAT OR CONFERENCE CENTER SIGNING

The Nebraska Department of Roads policy for providing directional guide signs for Retreat and Conference Centers on the State Highway System, other than the Interstate and Freeways is as follows:

- 1. The Center must have facilities specifically designed to host such events. A business or hall with attached room for meetings will not qualify
- 2. The Center must be maintained by a public agency or a private non-profit organization.
- 3. The Center must be located in a rural area and the intersection from the highway towards the Center must also be in a rural area. Drivers should be able to locate Centers within a community's corporate limits by street name or address, and will not be signed.
- 4. The Center must be located within 5 miles of the State Highway.
- 5. The Center must be open year round and hosting events regularly throughout the year.
- 6. The Center must draw a substantial amount of attendees from greater than 25 miles of the Center.
- 7. The number of visitors to the Center must be greater than 5,000 visitors per year.
- 8. Only one sign will only be installed for each direction of travel on the State Highway system at the intersection of roadway providing the most direct routes to the Center. However, if in the Department's opinion the area or location of the sign causes road clutter then a sign will not be allowed.
- 9. Trailblazer type signing form the State Highway system to the Center (if required) must be installed by the County or other agency with jurisdiction of the roadway prior to the Department installing a sign on the highway.



Policy.238.7



SCHOOL GUIDE SIGNS

It shall be the Department of Roads policy to provide school guide signs based on the following criteria:

- Only high schools, colleges, and universities will be considered for school guide signs. The school superintendent, school board or local governmental entity involved must make requests to the State Traffic Engineer for school guide signs.
- 2. Schools located on or near a state or federal highway may be signed, using standard regulatory and warning school-area signs, in accordance with the <u>Manual on Uniform</u> <u>Traffic Control Devices</u>.
- 3. When signing is provided for High Schools, under no circumstances will the school name be advertised on the sign, only the word "HIGH SCHOOL" shall be shown. For public and parochial schools in the same community the word "PUBLIC" or a religious denomination may be shown on the sign for needed identification.
- Guide signs will be provided only if the school is located within two miles of the highway in or near an urban area, or within five miles in an isolated rural area. Schools which are clearly visible from the highway, will not qualify for guide signs. Guide signs will not be provided for any high school on the Interstate or Freeway system. (See interstate signing policy)
- 5. School guide signs are limited to one sign each direction of travel on the highway route at the intersecting street or roadway providing the most direct route to the school. However, in congested areas or locations where limited space is available for sign placement, sign clutter may occur. If the Department feels that a sign clutter condition exists or would be created by the addition of signs, then school guide signs will not be erected.
- 6. If any additional trailblazer signs are required, they shall be furnished and installed by the school, the city or the county, prior to the installation of the guide signs by the state. Trailblazer signs shall conform to the requirements of the <u>Manual on Uniform</u> <u>Traffic Control Devices</u>.
- 7. Schools, which do not qualify for guide signs, may wish to consider installing a privately-owned sign <u>off</u> the right-of-way. They should contact the district sign permit officer to obtain rules and regulations pertaining to the installation of private signs.



Procedure.239.1



GUIDELINES -Adopt A Highway Signs

It shall be the policy of the Nebraska Department of Roads Traffic Engineering Division along with Operations Division to furnish Adopt A Highway signs for installation on the state highway system. In congested areas or locations where limited space is available for sign placement, sign clutter may occur. If a sign clutter condition exists or would be created by the addition of Adopt A Highway signs, such signs will not be permitted. Because regulatory, warning, and guide signs have a higher priority, Adopt A Highway signs shall only be installed where adequate spacing is available between the Adopt A Highway sign and other higher priority signs. Adopt A Highway signs shall not be installed in a position where they would obscure the road users' view of other traffic control devices.

Adopt A Highway signs shall use retroreflective sheeting of ASTM D 4956 Type I or Type II (Engineer Grade or Super Engineer Grade). Higher grade reflective sheeting may be used if in the best interest to the Department. The signs will be manufactured so that the background is reflective blue with reflective white letters.

The name plaques will follow these guidelines:

The dimensions shall be 24" X 12" for one or two lines and 24" X 18" for three lines.

They shall use no more than 14 total characters per line (including spaces) and no more than 3 lines of text.

They shall have 3" letters in Hwy "C" font. When necessary, Hwy "B" font may be used. Interline letter spacing may be reduced when it is necessary.

All word messages will be centered both vertically and horizontally on the plaque.

A 25 year star decal will be added to the sign for organizations that have sponsored a highway segment for 25 years or more.

Approved designs/ examples are shown on Page 2.

DR Form 20 should be used to order Adopt A Highway Signs.



Signed: 11/24/2015 Page 2 of 2





Policy.239.2



COMMUNITY ORIENTED RECOGNITION SIGNS

The Nebraska Department of Transportation (NDOT) understands the importance of community recognitions. In order to standardize placement, community oriented recognition signs will be allowed to be installed under the communities population sign. To be eligible, these signs must be community oriented, dealing with awards or accomplishments of the city. Signs commemorating the historical nature of the highway route may also be considered. Civic groups or service organizations are not eligible for this signing. A sample list of allowable signs, expired programs, and specific signs which do not meet these requirements is below.

Signs shall be provided by the community or the sponsoring organization. The signs must be tasteful in appearance, must not resemble an official traffic control sign and must be no larger than 36 inches wide by 36 inches high. Signs not previously approved shall be submitted to the NDOT State Traffic Engineer's office for approval prior to installation. Effective 2018, any telephone number displayed on a sign must be no longer than four characters (*i.e.* 911, or *55). Existing signs with 7 or 10 digit numbers may remain in service for the remaining life of the sign.

NDOT no longer provides or installs population signs for communities over 40,000, therefore, this policy does not apply to those communities (Policy 230.3 Population Signs).

Approved signs shall be installed by NDOT. Up to two signs (with a total height of no more than 48" tall) may be installed on each sign post for a maximum of four signs. If any single sign is greater in height than 24" and an additional sign would exceed the 48" maximum height, then only one sign will be allowed on that post. If more than two signs are authorized for locations where the population sign is mounted on a single post, NDOT will provide a two post mounting for the population sign to accommodate the additional community oriented signs. The sign assembly shall be constructed to maintain a desirable mounting height of four feet to the bottom of the lowest recognition sign.





As with any highway sign, community recognition signs will age with time, become faded, worn, or get vandalized. When NDOT determines that a sign.is no longer in good condition, or if a particular recognition program has ended, NDOT will remove the sign.

Allowed Signs

- Arbor Day Foundation- Tree City USA
- Crime Stoppers, Neighborhood Watch
- D.A.R.E. or Gang Resistant Community
- Storm Ready Community
- Historical/ Commemorative Hwy Signs
 - Historical Hwy 6
 - Ports to Plains Alliance

Expired Programs (should be removed)

- Nebraska Community Improvement Program (NCIP)
- All Nebraska Certified Community
- Community Improvement Program (CIP)
- Nebraska Heritage Community
- Heritage Nebraska- Main Street Community
- Nebraska Lied Main Street Community

Non-community recognition signs (should be removed)-

- Local non-vehicular ordinances (Green River, peddler, solicitors, etc.)
- Home of _____ (mayor, famous resident)
- Speed enforced by radar, etc.
- Public Power Community
- Engine Braking or Noise Ordinances sign should be on a separate sign away from the Population sign.



Policy.239.3



DRINKING WATER - WELL HEAD PROTECTION BOUNDARY IDENTIFICATION

The Department of Roads recognizes the need for water resource districts to designate the boundaries of underground water protection areas. In recognition of this need the Department of Roads has developed the following policy for the installation of signs or markers locating these areas:

- 1. Request for the installation of such signs or markers must be made in writing to the attention of the Signing and Marking Engineer. A copy of the proposed sign or marker and location map must accompany the request for approval.
- 2. The signs must NOT resemble any official traffic control sign or device. The legend must read "Entering Drinking Water Protection Area" or similar text approved by the Department. The sign size must be no larger than 30" x 36" in rural areas and 18" x 24" in urban areas.
- 3. The sign or marker, after approval by the Department of Roads, shall be furnished by the agency requesting the signing. The signs must be installed by or in coordination with the local Department of Roads maintenance staff. Signs not approved prior to installation shall be removed.
- 4. Since the purpose of this type of sign or marker is only to indicate the boundaries of the drinking water protection area, and has little to no direct impact to the traveling public, the signs themselves shall be located as far away as practical from the roadway and shall only be installed near the State Right-of-Way locations.
- 5. This policy only applies to the State Highway System. These signs shall not be permitted on the Interstate or Freeway System. Signs to be located on other city or county streets or roads would need to be approved by those governmental agencies.



Policy.239.4



COUNTY ORIENTED SIGNS IN CONJUNCTION WITH "ENTERING COUNTY" SIGNS

Signs to be installed under "Entering County" signs must be county oriented, dealing with awards, accomplishments or designation of the county. Civic groups or service organizations are not eligible for this signing. County oriented signs will not be allowed on the interstate or freeway system.

Signs shall be provided by the county or the sponsoring organization. The signs must be tasteful in appearance, must not resemble an official traffic control sign and must be no larger than 36 inches wide by 24 inches high. Signs not previously approved by the Department of Roads will be submitted to the Traffic Engineer for approval prior to installation.

Approved signs shall be installed by the Department of Roads. One sign may be installed on each sign post for a maximum of two signs. If more than one sign is authorized for locations where the county sign is mounted on a single post, the Department of Roads will provide a two post mounting for the county sign to accommodate the additional county oriented sign. The sign assembly shall be constructed to maintain a minimum mounting height of four feet except that five feet shall be maintained on expressways.



Policy.243.1



INTERSTATE & FREEWAY SIGNING: EXIT, INTERCHANGE, & OTHER GUIDANCE SIGNS

It shall be the policy of the Nebraska Department of Roads to provide guide signs on the Interstate and Freeway Systems to provide motorists with exit numbers, destinations reached at each exit, the distance to the next exit or destination, information on multiple exits serving the community, and miscellaneous information such as corporate limits, county lines and rivers.

The purpose of this policy is to establish requirements and procedures for the installation of various types of guide signs on the Interstate System and other Primary highways constructed to Freeway standards, in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and the Nebraska Supplement to the MUTCD.

- A. Exit Number Signs
 - All exits from the Interstate System shall be numbered. The method of displaying exit numbers shall conform to existing exit signs already in place on the Nebraska Interstate System, using 18" numbers with a 30° or 45° arrow on the main panel, sign no. E5-4 and 12" letters (Exit) on the top panel, sign no. E5-3.
 - 2. The exit numbers used are to correspond with the reference post system. The reference post system begins with zero at the south and west borders of the state or the south or west terminals of a route and increases in a northerly or easterly direction.
 - 3. The exit number used shall be the reference post number immediately preceding the point where the intersected road crosses the mainline. Interchanges with multiple exits shall be numbered with an "A" or "B" suffix. The same letter is to be used for ramps and loops carrying traffic in the same direction on the intersected road.
- B. Advance Guide and Exit Direction Signs
 - 1. Advance guide and exit direction signs shall conform with requirements in Section 2E of the MUTCD and the Nebraska Supplement to the MUTCD.
 - 2. Normally, the advance guide sign is placed 1 mile from the exit. Where interchange spacing is close, the advance guide sign may be a minimum of ¼ mile from the exit. For junctions of two Interstate or Freeway routes or interchanges with other major Primary routes, a second advance guide sign should be used two miles from the exit.
 - 3. The destinations displayed on the advance guide sign(s) and exit direction sign shall be the same.
 - 4. The first line on advance guide and exit direction signs should display the route marker shield (Interstate, U.S., Nebraska or County) for the intersected road. Intermediate lines are to show the name(s) of <u>not</u> to exceed two destinations accessible from the exit.



- 5. The bottom line of the advance guide sign is to show the distance to the exit; i.e. 1 mile, ½ mile, in fractional increments of ¼ mile. The exit direction sign is to have an upward slanting arrow on the right side of the sign pointing toward the exit. For left exits, the arrow should be placed on the left side of the exit direction sign.
- 6. Exit number plaques (when used) should be located towards the right edge for right exits, and towards the left edge for left exits.
- 7. The following criteria will be used for determining destinations to be shown on the Advance guide sign(s) and exit directional sign.
 - a. Except in unusual cases, one destination in each direction of travel on the intersecting road will be shown. Two destinations in one direction may be displayed in cases where there is no warranted destination in the other direction. In such cases, the two destinations must conform to the criteria specified.
 - b. Only those destinations will be considered which are either on the intersecting road or can be readily reached without indirect travel. In such cases, the intersecting road must connect with another principal route to the destination.
 - c. Cities having a population greater than 5,000 shall be given preference since, in all probability, these cities are better known and generate more travelers, and, therefore, are more desirable for orientation purposes. The largest city having a population greater than 5,000 and within a distance of 25 miles on the intersecting road will generally be used. In low population areas, a larger city greater than 25 miles from the Interstate on the intersecting road may be used.
 - d. In cases where there is no city with a population of 5,000 within 25 miles, the largest corporate area with a population between 1,000 and 5,000 and within 25 miles may be used.
 - e. In the event that no corporate area with a population of at least 1,000 is within 25 miles, the name of the next County seat may be used if it is within 25 miles.
 - f. Where none of the criteria listed are met, the name of the first corporate area within 10 miles of the interchange may be posted unless some other important traffic generator justifiably takes precedence.
- 8. At interchanges with County routes or unmarked Primary routes, the first incorporated community or qualifying supplemental destination directly served or within 1 mile of the route shall be shown for each direction.



C. Supplemental Designation Signs

- Where the need exists to display more than the two qualifying destinations on the advance guide and exit direction signs, a supplemental destination sign may be installed. It normally is installed midway between the advance guide signs and the exit direction signs. No more than two supplemental destinations accessible from the interchange shall be shown on the sign. Supplemental designation signs shall conform to requirements in section 2E-35 of the MUTCD.
- 2. Guidelines and Criteria to be used in approving supplemental destinations shall be prioritized as follows:
 - a. Incorporated communities meeting the criteria for the advance guide and exit direction signs, but omitted because other communities had a higher priority or a larger population.
 - b. Regional airports, bus terminals and ground transportation centers which generate significant traffic volumes consisting of a substantial number of individuals residing more than 50 miles from the facility.
 - c. Non-profit recreation areas that generate significant traffic volumes which are located within 25 miles of the interchange.
 - d. Colleges or Universities that are accredited and have a full-time on-campus student enrollment complying with the following table may be considered for supplemental signing:

Criteria	Urban Metro Area	Rural Area
	Population Greater Than	
	200,000	
Total Full Time	≥ 2,000 Full Time Students	≥ 1,000 Full Time Stu-
On-Campus Enrollment		dents
Distance From Interchange	≤ 3 Miles	≤ 15 Miles

Part-time or On-Line student enrollment will not be considered.

- e. Museums, attractions, or facilities of regional or national significance that are operated by non-profit organizations, generate significant traffic volumes, and which are located within 15 miles of the interchange. Museums must be approved for signing by the State Historical Society. All attractions shall have at least 15,000 visitors annually and be open to the public 6 days a week for a minimum of 32 hours per week. If signed facilities fail to meet 15,000 visitors per year for two consecutive years, their guide signs will be removed.
- f. Historic Districts of regional or national significance that generate significant traffic volumes and are located within 10 miles of an interchange. The District must be approved by the State Historical Society, must be registered as a Historic District in the National Register of Historic Places, and have at least 150,000 visitors annually.



Signing will be limited to one location in each direction at the exit closest to the district.

- g. Non-profit cultural facilities such as auditoriums, coliseums, stadiums, arenas, fairgrounds, etc. which generate significant traffic volumes and which are located within 10 miles of the interchange in rural areas, and within 5 miles in urban areas. The facility shall have a seating capacity of at least 5,000, have regularly scheduled events 12 months per year, and have an annual attendance of 250,000 or more.
- 3. To qualify for supplemental signing under any of the above criteria, the community or facility must be on or within 1 mile of the intersected route and must not be beyond a destination shown on the advance guide and exit direction signs. If more than two communities or facilities qualify under this section, the closest, regardless of size or significance, shall be shown.
- 4. For traffic generators not specifically addressed above, the American Association of State Highway and Transportation Officials (AASHTO) "Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways" will be used to determine if a destination warrants signing. The AASHTO guidelines also include traffic generators that do not warrant signing.

D. Distance Signs

- 1. Distance signs shall conform to requirements in Section 2E-39 of the MUTCD.
- 2. Where space between interchanges permits, a distance sign shall be installed as one of the post-interchanges sequence of signs. The distance sign may contain up to three lines of legend. The destination displayed shall be those communities or facilities meeting requirements of Sections "B" and "C" of this Policy. In addition, Primary route numbers or County route numbers may be used where other destinations do not exist or are not applicable.
- 3. The top line of a distance sign shall display the closest community shown on the advance guide sign for the next interchange. In the event the two communities shown on the advance guide sign are equidistant from the interchange, the one with the largest population shall be shown.
- 4. The second line, if used, may show another community accessible at the next interchange with preference given to the one closest to the exit. In lieu of showing another community at the next interchange, the second line may be used to show a community or a supplemental destination accessible from subsequent interchanges. The choice of destinations shown on the second line, when used, may be varied on successive distance signs to give the motorist maximum information about communities or facilities served by intersected routes.



5. The bottom line of distance signs shall display the name of the control city for that route. On successive distance signs, the intermediate control city, where applicable, may be alternated with the control city on the bottom line. Control cities and intermediate control cites used for the Nebraska Interstate System are as follows:

Route	Control City	Intermediate Control
I-80	Cheyenne	Hastings
	Sidney	
	North Platte	
	Kearney	
	Grand Island	
	Lincoln	
	Omaha	
	Council Bluffs	
	Des Moines	
17/	Deriver	
I-70	Omaha	Julesburg
	Ullalla	
1-29	Sioux City	
1 27	Kansas City	Council Bluffs
	Runous ong	

- 6. The mileage shown on distance signs shall be to a point near the center of the community. A public building, such as the post office, city hall, or courthouse, should be used as a point of reference. The mileage shown for the top destination shown on the distance sign shall not be to the point of exit from the route.
- E. Interchange Sequence Signs
 - 1. Interchange sequence signs shall conform to requirements in section 2E-40 of the MUTCD.
 - 2. Interchange sequence signs may be used on urban Freeways where interchanges are closely spaced and room is not available to provide conventional advance guide signs, or they may be used in addition to conventional advance guide signs. Interchange sequence signs should be used when interchange spacing becomes less than ½ mile. When used, they shall be placed between all exits in both directions on the route until interchange spacing again equals or exceeds ½ mile, at which point conventional advance guide signs shall be used.
- F. Community Interchange Identification Signs
 - 1. Community interchange identification signs shall conform to requirements of Section 2E-41 of the MUTCD.
 - 2. Where two or more interchanges in succession serve the same community, a community interchange identification sign may be placed in advance of the advance guide sign for the first interchange approaching each direction.



INTERSTATE & FREEWAY SIGNING: EXIT, INTERCHANGE, & OTHER GUIDANCE SIGNS

Policy.243.1

G. Next X Exits

The top line shall name the community and the bottom line shall carry the message "NEXT XX EXITS".

H. Miscellaneous Guide Signs

Miscellaneous guide signs shall conform to requirements in Section 2E-55 of the MUTCD.





Policy.246.1



TOURIST INFORMATION CENTERS

In recognizing the importance of enabling the traveler to obtain information on our state, as well as the many attractions within the state, the Nebraska Department of Roads will provide guide signs on the Interstate and Freeways for tourist information and welcome centers which meet the following requirements:

- 1. The tourist information and welcome center must be solely involved in providing tourist information and operated by the state or other governmental and nonprofit organizations. Business establishments offering tourist information, pamphlets, maps, etc. would not qualify as they are still considered to be a part of a private enterprise.
- 2. Tourist information or welcome center signs shall be erected only for qualified centers located within one mile of the interchange, as measured from the intersection of the exit ramp to the nearest point of intersection of the driveway of the qualified center and public highway.
- 3. Tourist information or welcome centers must be open 7 days a week for a minimum of 8 hours per day from May-August. Tourist information or welcome centers must be open 5 days a week for a minimum of 8 hours per day from September-April and must maintain a 24 hour availability box for State Visitor Guides and maps. Center hours must be posted at the main entrance.
- 4. Tourist information or welcome centers shall be located in an appropriate building or area that is clearly identified as a tourism center.
- 5. Before the signs are installed, consideration will be given to the adequacy of parking and rest room facilities at the site.
- 6. Sign clutter is a condition that exists when the information intended to be conveyed to a motorist traveling at the prevailing speed at any location on any roadway exceeds the ability of the motorist to see, select, understand and react in a safe and efficient manner to his/her vehicle operation. Consideration must be given to sign spacing, text size, messages per sign, geometric configuration of the roadway, and the visual abilities of the older driver. In congested areas or locations where limited space is available for sign placement, sign clutter may occur.

If the State Traffic Engineer determines a sign clutter condition exists or would be created with the addition of signs, such signs will not be erected.

7. Trailblazer-type signing on the off-ramp may be installed where it might be unclear which direction to follow. The location of the trailblazer-type signs shall be determined



by the Department of Roads; however, the signs shall be acquired, installed, and maintained by the agency that has jurisdiction for the maintenance of the roadway. All necessary trailblazer signs shall be installed prior to the installation of the guide signs on the Freeway System.

Signs and Sign Locations:

 Tourist Information or Welcome Center signs shall conform to the requirements in sections 2I.08 of the Manual of Uniform Traffic Control Devices (MUTCD). Tourist Information or Welcome Center signs shall have white letters, symbols, and borders on a blue background. The signs shall be mounted in an effective location, between the Advance Guide sign and the Exit Direction sign, in advance of the exit leading to the available services.

The Agency or Organizational name will not be shown on the signs.



Figure 1 - Freeway Sign



Figure 2 - Trailblazer Sign

- 2. The location of signing should be in accordance with requirements pertaining to General Service signing (see Chapter 2I).
- 3. As an alternative, the Information Symbol (D9-10) sign may be appended to the guide signs for the exit providing access to the tourist information center. As a second alternative, the Information Symbol sign may be combined with the General Service signing.



Procedure.251.1



BUSINESS & ADVERTISING SIGNS

Sign requests not covered in other Policy and Procedure information will typically fall under the consideration of a Business Sign or an Advertising Sign. These can typically be dealt with using the "So you want a sign?" information or the TODS & LOGOS program. Copies of the "So you want a sign?" and Nebraska LOGOS, Inc brochure are included in this manual for your convenient reference.

"So you want a sign?" is available to the public on the NDOR website: http://www.nebraskatransportation.org/roway/pdfs/hwysign.pdf

The Nebraska LOGOS, Inc brochure covers some general information regarding the TODS & LOGOS program in Nebraska. Detailed information about TODS & LOGOS can be requested from the Traffic Engineering office or refer to the FAQ section on the Nebraska TODS/LOGOS website: http://www.interstatelogos.com/offices/NElogos1.cfm

If there are still questions please have business, or individual, contact the Traffic Engineering office in writing with details about their sign request.

So you want a sign?

- A Guide to Highway Signs -



Brought to you by a joint effort of the Nebraska Department of Economic Development and the Nebraska Department of Roads.

So you want a sign?

his guide is intended to provide Nebraskans with some basic information about highway signing and to help them locate assistance when considering a request for such signing.

Certain types of information signs can be located along our state's highways within the highway right-of-way and outside the right-of-way on private property. **This brochure is designed to generally acquaint you with the types of signs available for placement on or adjacent to the highway rightof-way.** However, the space available in this brochure does not allow us the opportunity to provide all the detailed rules and regulations that apply to signs.

Each situation is unique and must be thoroughly studied to determine if it meets the specific eligibility criteria for each type of sign, and to determine if all the required conditions are met for placing a sign in the right-of-way or to permit a sign off the right-of-way.

If you want to know who to contact about highway signs, where to get help, and what highway signs are available to the public and to private businesses—read on. And, you will find a "starter" application form at the back of this brochure.
Highway signs... let's take a look

Commercial activities and business enterprises which include, but are not limited to, restaurants, motels, gas stations, and campgrounds, may qualify for:



- On-Premise Signs
- Advertising Signs

Contact your district Department of Roads (DOR) Sign Permit Office

Logo Signs

Contact Nebraska Logos, Inc.

• Tourist Oriented Directional Signs (TODS) Contact Nebraska Logos, Inc.

For public places owned or operated by governments or their agencies:

- Directional Signs Off the Right-of-Way
- On-Premise Signs
- Advertising Signs
- Official Signs Off the Right-of-Way Contact your district DOR Sign Permit Office.
- Official Signs On the Right-of-Way Contact the DOR Traffic Engineering Division.
- Tourist Oriented Directional Signs (TODS) Contact Nebraska Logos, Inc.

For private attractions—including areas of natural phenomena, historic, cultural, scientific, educational, and religious sites; and areas of natural scenic beauty or naturally suited for outdoor recreation:

• Official Signs On the Right-of-Way Contact the DOR Traffic Engineering Division.

- Directional Signs Off the Right-of-Way
- On-Premise Signs

• Advertising Signs Contact your district DOR Sign Permit Office.

• Tourist Oriented Directional Signs (TODS) Contact Nebraska Logos, Inc.

Important

Many of these signs will require a permit before they may be erected.

Phone numbers and addresses for contacts appear on page 9.

"Official Sign," "On-Premise Sign" What exactly are all these signs?

On-Premise Signs

These signs are subject to the control of the Nebraska Department of Roads if they are adjacent to a primary highway (as so designated by the DOR) or the interstate. They are signs that you own and erect on your property, and they advertise goods or services available on your property.

Any sign on which you sell advertising space or for which you receive any payment from others, for any reason, is not considered to be an on-premise sign. Restrictions apply for the number of these signs you may have, as well as size, spacing, and lighting.

Advertising Signs

These signs are subject to the control of the DOR if they are adjacent to a primary highway (as so designated by the DOR) or the interstate. These signs are only allowed in commercial or industrial areas. In those cities and counties with zoning, the signs must be located in zoned commercial or industrial areas. Further restrictions apply to zoned or unzoned areas adjacent to interstate highways.

In cities and counties without zoning, the signs must be in unzoned commercial or industrial areas. These signs must be located on private property and you must have a lease with the landowner. You may own the sign or you may lease advertising space from a sign company which would own and erect the sign. Restrictions apply for the size, spacing, and lighting.

Logo Signs

These signs are owned and erected by the DOR's agent, Nebraska Logos, Inc. They are located in the right-of-way on interstate and primary highways. To qualify, you must have a business that furnishes gas, food, lodging, or camping and meet the criteria established by rules and regulations.

TODS

TODS stands for "tourist oriented directional signs." They are owned and erected by a contracted agent for the Department of Roads. TODS are located in the right-of-way on rural highways, and cannot be erected on the interstate or interchanges on expressways. (Signs may be allowed at other locations, including intersections on an expressway.) To qualify, a major portion of your income must be derived from the activity or visitors to your business, in its normal season, from motorists not residing in the immediate area. In addition, the activity must meet the criteria established by rules and regulations.

Directional Signs Off the Right-of-Way

These signs are subject to the control of the DOR if they are adjacent to a primary highway (as so designated by the DOR) or the interstate. These signs are located on private property and either owned by you or a sign company. The message on these signs must be limited to identification of the activity and directional information to assist in locating it. Descriptive words, phrases, or pictorial representations are not permitted. There are limitations on the number of these signs, as well as size, spacing, and lighting criteria which apply to these signs. In addition, there are limits on how far away these signs can be from the advertised activity.

Official Signs On the Right-of-Way

These signs are owned and erected by the DOR. They include regulatory, warning, construction, and guide signs necessary for the safe movement of traffic. Traffic generators and certain public-owned facilities may be eligible for guide signs on interstate or state highways depending on amount of traffic generated, their location relative to the highway, and their hours and type of operation. Commercial activities do not qualify for these signs.

Official Signs Off the Right-of-Way

These signs are subject to the control of the DOR if they are adjacent to the primary highway or interstate. Official signs are owned and maintained by governmental agencies within their territorial jurisdiction. The signs must be authorized or required by law or an ordinance directing official duties and responsibilities of that agency. Official signs cannot advertise any product or service. Restrictions apply for size, spacing, and lighting.

What is possible ... and what is not

Following are a few descriptive "examples" of business situations in a Question and Answer format. Hopefully, these representative questions will give you an idea of possibilities and conditions appropriate for highway signing.

"County Historical Society Museum" I manage a county historical society that is a nonprofit operation, supported through some public funds, donations, and a small admission charge. The museum is open year-round, seven days a week, eight hours per day, except for major holidays, and has an annual attendance of 11,000. It is located in the city limits of the county seat (population 1,500) along the route of an east-west state highway and about a mile east of the intersection in the community with a north-south U.S. highway. What kind of highway signs can we get erected, both in the community and outside the community, to inform drivers of the museum?

You are eligible for official museum signs on the rightof-way from each direction on the nearest highway to your facility, in this case, the east-west state highway. If the museum is visible from the highway and on-premise signs are visible, no right-of-way signs would be installed.

Signing under the TODS program may be available on the north-south highway.

Off the right-of-way, you may be able to erect official, onpremise, directional, and commercial advertising signs.

"Motel and Restaurant"

I am developing a 40-unit motel and restaurant on rural property two miles south of Interstate 80 along a U.S. highway. The property is in a good location to attract many unplanned or "impulse" stops, provided signs can be strategically located along Interstate 80 to attract the attention of drivers. So I am interested in learning about a full range of possible signs I see along Interstate 80, including logo signs, "jumbo" on-premise signs, and billboards. What are the rules and regulations covering these different types of signs?

Perhaps you will want to consider the Interstate logo signing program, as this situation is not eligible for state furnished signs, because it is operated "for profit."

Off the right-of-way, you may be able to erect on-premise and commercial advertising signs.

"Guest Ranch"

My wife and I have started operating a guest ranch, offering horseback rides, hay wagon rides, fishing, cookouts, and other experiences on a working cattle ranch in the Sandhills. Our guest ranch season is five months long, from May 15 through October 15. The ranch is reached by driving north 40 miles from Interstate 80 on a state highway, and then west 2 miles on a county road. The only sign that now exists for the guest ranch is on our front gate. What kind of highway signs and how many can we get? What are the likely costs? And who should we contact? We are interested mainly in signs that give directions.

A

Since your facility is operated "for profit," it is not eligible for state furnished right-of-way signs. You may wish to consider the TODS.

Off the right-of-way, you may be able to erect on-premise, directional, and commercial advertising signs.

Are you interested in highway signing for your business?

If you wish to proceed with a highway sign request for your business, please complete and send in the form provided. The more details you include in this initial application, the better. A written response will be returned from the Department of Roads. If you qualify for signing, the Roads Department will work with you to complete the necessary paperwork. If you have further questions or concerns, please contact the Nebraska Department of Roads' Traffic Engineering Division.

For more info ... give a call

Contact these folks for assistance or for more information:

Department of Roads District Offices

District 1 302 Superior St. Lincoln, NE 68521 (402)471-0850

District 2 4425 S. 108th St. Omaha. NE 68137 (402)595-2534

District 3 408 No. 13th St. Norfolk. NE 68702 (402)370-3470

District 4

211 N. Tilden Grand Island, NE 68803 Bridgeport, NE 69336 (308)385-6265

District 5 514 Main St. (308)262-1920 **District** 6 1321 N. Jeffers North Platte, NE 69101 (308)535-8031

District 7 619 Auditorium Dr. McCook, NE 69001 (308)345-8490

District 8

736 E. 4th St. Ainsworth, NE 69210 (402)387-2471



Traffic Engineering Division

NDOR State Headquarters P.O. Box 94759 Lincoln, NE 68509-4759 (402)479-4594

Nebraska Logos, Inc.

315 South 9th Street Suite 207 Lincoln, NE 68508 (402)435-5646 (800)333-6467

 \mathbf{P} lease provide the needed information and all details requested here. If you need additional space, write on the back of this form and send it to your district office (see page 9).

BUSINESS NAME:			TELEP	HONE NO.:
ADDRESS:				
CITY:		STATE:		ZIPCODE:
TYPE OF BUSINESS OR ORGANIZATION:	LOCATION	OF YOUR BU	JSINESS	OR ORGANIZATION:
TYPE OF SIGN YOU ARE INTERESTED IN: On-Premise Sign Advertising Sign Logo Sign Tourist Oriented Directional Sign (TOI	□ □ □ DS)	Directiona Official S Official S	al Sign ign On ign Off	Off the Right-of-Way the Right-of-Way the Right-of-Way
HOURS OF OPERATION: DAYS OF THE I OPEN TO THE I	WEEK PUBLIC:	L Y	ENGTH C OU OPEF	OF SEASON OR MONTHS RATE DURING YEAR:
OTHER COMMENTS OR DETAILS ABOUTYOUR OPER	RATION:			
APPLICANT'S SIGNATURE:			DA	TE:

NEBRASKA Logos, Inc.

Specific Information Logo Sign

Program



Q. What is Specific Information Signing?

A. Specific Information Signing (logo) is a program offered by the Nebraska Department of Roads which permits eligible businesses providing key services to motorists to place their logos on signs along certain designated expressways. The program is being administered by Nebraska Logos, Inc. under the supervision of the Nebraska Department of Roads.

Q. What interchanges are included in the program?

A. I-80, interchanges: 1-101, 107-399, 403-440 I-680, (Omaha), interchanges: 6, 9 and 12 I-129, interchanges: 1 and 2

Q. What services are included on the Specific Information Signs?A. Gas, food, lodging and camping.

Q. Are all businesses providing these four key services eligible for participation?

A. There are specific criteria which each type of business must meet to be eligible for the program. The chart on this brochure will help you to determine if your business is eligible.

Q. How will distance be measured to determine if my business meets the mileage criteria?

A. Distances will be measured from the gore (the point at which the ramp road leaves the main line roadway), the right-turn lane, or intersections to the nearest point of intersection of the driveway of the qualified business.

Q. Where will the Specific Information Sign panels be placed?

- **A.** The Specific Information Sign panels are normally placed along the freeway within one mile in advance of the exit. The Specific Information Sign panels shall be placed in the order of camping, lodging, food, and gas as observed in the direction of travel. Ramp Specific Information Sign panels shall be placed along the exit ramp.
- Q. Will all qualified businesses who wish to participate in this program be required to have ramp signs?
- A. No. Businesses readily visible from the ramp terminal will not be required to have ramp signs.

Q. How much will it cost to participate in the Specific Information Sign Program?

A. The lease fee of the program is as follows:
 \$1,200/per year, per direction. This includes the rental fee for one (1) mainline sign and (1) ramp sign.
 \$120.00 per trailblazer sign, per year, per direction.

RULES REGULATIONS

GULATIONS	GASOLINE	1	FOOD	LODGING	CAMPING
Maximum number of logos per direction	6		6	6	6
Maximum distance of service	3 miles	3	miles	3 miles	15 miles
Minimum period of operation	Continuous operation 16 hours 7 days/week on interstate; and 12 hrs/day 7 days/week on primaries	Be in cor operation 7 days pe later that serve a r continent	ntinuous to serve 3 meals tr week; open no h 10:00 am and ninimum of tal breakfast		
Required service to be provided & other requirements	 Fuel, oil, water, tire repair Restrooms Drinking water Telephone available for public use 	 Be apprelicensed or politi jurisdict Telepho public u 	wed and/or by State Agency cal entity having ion ae available for se	 Be approved and/or licensed by State Agency or political entity having jurisdiction Telephone available for public use Adequate sleeping accommodations 	 Be approved and/or licensed by State Agency or political entity having jurisdiction Modern sanitary facilities and drinking water Adequate camping and parking spaces

Q. How can a gas, food, lodging or camping business be included on a logo sign?

A. A representative of Nebraska Logo, Inc. will be marketing your interchange. The representative will call on eligible businesses with priority given to the six businesses closest to the interchange in each business category. If your business is interested, Nebraska Logos, Inc. will accept an application to verify that your business meets all business eligibility requirements summarized in this brochure and the Rules and Regulations adopted by the Nebraska Department of Roads. If the application is approved, you will be notified in writing. A representative of Nebraska Logos, Inc. will then follow up to help you complete the Logo Agreement and other necessary paperwork.

Q. What is the next step?

A. A Nebraska Logos, Inc., account representative will contact the selected participants to assist in designing their logo sign. *Creative design assistance is available at no charge*, however manufacturing of your logo sign is an additional fee and is not included in your annual Specific Information Sign lease fee. When you receive written approval of your logo design from Nebraska Logos, Inc., you will decide whether to have Nebraska Logos, Inc. fabricate your logo sign(s) or another manufacturer. All fabrication must be done in accordance with the Nebraska Dept. of Roads specifications. Nebraska Logos, Inc. will attach your logo signs to the appropriate Specific Information Sign at the appropriate roadways at no additional fee.

Q. How will the signs be maintained?

A. All Specific Information Sign maintenance will be performed by Nebraska Logos, Inc., or its contractors.

Q. Will I be able to make changes on my signs after installation?

A. Your logo cannot be altered after it has been installed. If your business requires a new design, you must submit the new design to Nebraska Logos, Inc. for approval. If approved, the new logo sign must be produced and will be installed by Nebraska Logos, Inc.

Q. Can I be removed from the Specific Information Sign Program?

A. Yes, conditions can result in the removal of your logo. If your business no longer offers the required services listed in the table above, you will be notified that your logo will be removed if the situation is not corrected within 30 days. There shall be no refund of any fee.



315 South 9th Street, Suite 207 Lincoln, Nebraska 68508

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Traffic Engineering Policy & Procedure



300 Markings, Object Markers & Delineators

310 General Marking Information

- 311.0 Pavement Marking
- 312.0 Permanent Pavement Marking
- 313.0 Pavement Marking Material
- 314.0 No-Passing Zone Markings
- 315.0 Raised Pavement Markers
- 316.0 Transverse Markings (Stop, Yield, Crosswalks, etc.)
- 317.0 Legends & Symbols
- 318.0 Miscellaneous & Other Pavement Markings

320 Object Markers

- 321.0 Design and Placement
- 322.0 Objects in the Roadway
- 323.0 Objects adjacent to the Roadway
- 324.0 End of Road Markers
- 329.0 Miscellaneous & Other Object Markers

330 Delineators

- 331.0 Design & Application
- 332.0 Placement & Spacing
- 339.0 Miscellaneous & Other Delineators

340 Rumble Strips



Traffic Engineering Policy & Procedure



400 Traffic Signals

410 General Information & Definitions

- 411.0 Traffic Control Signals
- 412.0 Installation or Removal of Signals
- 413.0 Advantages & Disadvantages
- 414.0 Alternatives to Traffic Signals
- 419.0 Miscellaneous & Other Traffic Signal Information

420 Traffic Signal Warrants

- 421.0 Signal Study Information
- 422.0 Warrants
- 429.0 Miscellaneous & Other Warrant Information

430.0 Traffic Control Signal Features

431.1 Traffic Signal Pole Design

440.0 Pedestrian Control Features

450.0 Emergency Vehicle Access

460.0 Flashing Beacons

- 461.0 General Information
- 462.0 Intersection Control
 - 462.1 Intersection Beacon Control
- 463.0 Warning Beacons 463.1 Flashing Beacon Installation
- 464.0 Speed Limit Beacons
- 465.0 Stop Sign Beacons
- 469.0 Miscellaneous & Other Flashing Beacon Information



Procedure.431.1



TRAFFIC SIGNAL POLE DESIGN

It is the intent of the NDOR to design traffic signal poles and mast arms to the 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. All new signal poles and mast arms shall be designed to these standards.

Original Signed:

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Recommended:	Dan Waddle Traffic Engineer	Date: <u>5-10-10</u>	
Approved:	John Jacobsen Deputy Director - Operations	Date: <u>5-11-10</u>	



Policy.462.1



INTERSECTION CONTROL BEACON

An intersection control beacon is a standard traffic signal head having flashing Yellow or Red indications in each face. They are intended for use at intersections where traffic or physical conditions do not justify conventional traffic signals but where high crash rates, or the potential of high crash rates, exists and indicate a special need.

The selection and use of intersection control flashing beacons shall be based on an engineering study.

The need for a beacon should be considered if the following criteria is met:

• Five or more reported crashes within a 12-month period; or 7 reported crashes within a 2-year period; or 9 reported crashes within a 3-year period, of types susceptible to correction by a beacon.



Policy.463.1



FLASHING BEACON INSTALLATION

The following procedures have been adopted for installing flashing amber beacons on the State Highway System. This includes flashing beacons associated with pedestrian crossings, school crossings and school speed limits.

- 1. The Traffic Engineering Division will determine if a flashing beacon installation can be justified at a particular location.
- 2. If the City or local governmental agency concurs in the installation, a City-State agreement will be prepared to cover the operation of the beacon. The political subdivision shall be responsible for 100% of the installation costs. The agreement will require the City to maintain the flashing beacon installation and be responsible for power costs.
- 3. The State will provide the beacon, flasher cabinet and timer (if required) to the City. The City will be billed for the cost of the equipment.
- 4. The maintenance superintendent for the area will assist the City in obtaining the services of an electrician or public power utility to make the installation. The costs of these services will be paid directly by the City.
- 5. The State will provide basic plans for the installation and provide a list of qualified electrical contractors.
- 6. State maintenance personnel will install new sign posts and signs for the installation at no cost to the local agency.



Traffic Engineering Policy & Procedure



500 Geometrics & Other Designs

- 510 Turning Lanes
- 511.0 Left Turn Lanes
 - 511.1 Determining Left Turn Lanes
- 512.0 Right Turn Lanes
- 519.0 Miscellaneous & Other Turning Lane Information



Procedure.511.1



DETERMINING LEFT-TURN LANES

Left-turn lanes are auxiliary lanes that are not considered through travel lanes but are intended for the use of vehicular traffic that are turning left off of the traveled roadway. They increase the safety of the drivers by providing a separate storage area for turning traffic, a means of safe deceleration for the turning traffic, and significantly improve the capacity and safety of the intersection.

Traffic Study

The determination and design of a left-turn lane shall be accompanied by a traffic study. The following factors should be taken into account when looking at the addition of a left-turn lane:

The type of highway Geometric conditions (horizontal and vertical alignment) Land use & future development Type of traffic control Type of left-turn phasing (if signal is present) Number of opposing through lanes Opposing approach speed limit Approach speed limit Volume of left-turning traffic Volume of opposing traffic Amount and locations of driveway accesses within the vicinity Location of island or raised median (if present) Sight distances Accident history Driver expectations

The final decision of determining the location and design of a new left-turn lane shall be determined by the Traffic Engineer. Left-turn lanes shall be installed on all legs of each new signalized intersection. The construction of new opposing left-turn lanes should be designed with a positive offset. A left-turn lane should be considered on a construction project of a high-speed rural highway that intersects with a heavily traveled intersecting roadway.

Volumes

A left-turn lane should be considered on a two-lane highway based on the latest version of Exhibit 9-75 of the "A Policy on Geometric Design of Highways and Streets".

Additional guidance for left-turn lanes on two or more lane highways can be found from Figure 4-12 from the NCHRP report 279 "Intersection Channelization Design Guide".

When left-turning volumes at an intersection approach 300 vehicles per hour or are projected to, double left-turn lanes should be considered. An additional capacity analysis of the intersection should be performed to determine what traffic controls are needed for proper functioning of the intersection.



Accidents

A left turn lane may also be considered if there are five or more crashes in a 12 month period attributed to the lack of a left turn lane .

<u>Design</u>

The design of left-turn lanes should reflect the anticipated purpose of the lane, the characteristics of the highway, and any restrictions at the intersection. Design of the approach taper, bay taper, length of the lane (storage), width of the lane, and the departure taper shall be considered. Pages 55 and 56 of the NCHRP report 279 "Intersection Channelization Design Guide", or taper/turn lane lengths as modified on page 4 of this procedure, may be used as guidance for the design of left-turn lane features. Also pavement markings and signing that will accommodate any left-turn lane design should be considered. The final design values shall be determined by the Traffic Engineer.

Additional guidance for the design of dual left-turn lanes can be found on page 57 in the NCHRP report 279 "Intersection Channelization Design Guide."



Procedure.511.1

Metric			US Customary						
Opposing	Ad	vancing vo	olume (ve	h/h)	Opposing	Ad	vancing v	olume (ve	eh/h)
volume	5%	10%	20%	30%	volume	5%	10%	20%	30%
(veh/h)	left turns	left turns	left turns	left turns	(veh/h)	left turns	left turns	left turns	left turns
	60-km/l	n operatin	g speed		40-mph operating speed				
800	330	240	180	160	800	330	240	180	160
600	410	305	225	200	600	410	305	225	200
400	510	380	275	245	400	510	380	275	245
200	640	470	350	305	200	640	470	350	305
100	720	515	390	340	100	720	515	390	340
80-km/h operating speed				50-mph operating speed					
800	280	210	165	135	800	280	210	165	135
600	350	260	195	170	600	350	260	195	170
400	430	320	240	210	400	430	320	240	210
200	550	400	300	270	200	550	400	300	270
100	615	445	335	295	100	615	445	335	295
100-km/h operating speed				60-mph operating speed					
800	230	170	125	115	800	230	170	125	115
600	290	210	160	140	600	290	210	160	140
400	365	270	200	175	400	365	270	200	175
200	450	330	250	215	200	450	330	250	215
100	505	370	275	240	100	505	370	275	240

Exhibit 9-75 - Guide for Left-Turn Lanes on Two-lane Highways



Volume warrants for left-turn lanes at unsignalized intersections Figure 4-12 of the NCHRP report 279 "Intersection Channelization Design Guide"

Determining Left-Turn Lanes

DETERMINING LEFT-TURN LANES

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Procedure.511.1

Guidelines for Design of Left-Turn Lanes See diagram on page 5 for additional details

L_d/_b -- Length of Taper and Lane for Deceleration and Braking

Functional Basis: To provide sufficient length for a vehicle to decelerate and break entirely outside the through traffic lanes

Desirable Design: Deceleration in gear for 3 seconds (occurs over bay taper followed by comfortable breaking to a stopped position

Desirable Design Values For $L_d/_b$		
S - Speed (mph)	Total	
30	235	
40	315	
50	435	

60

Minimum Design: Braking begins at 2/3 full lane width, with minimum 50-foot storage. For low speeds only, the following values apply

530

Minimum Design Values For L _d / _b			
S - Speed (mph)	Total		
30	230		
35	250		
40	280		
45	320		

L_s -- Length of Lane for Storage (Full Width Lane)

Functional Basis: To provide sufficient length for a reasonable number of vehicles to queue within the lane without affecting other lanes

Desirable Design: Based on twice the mean arrival rate (per cycle for signals, per 2-minute period for stop control) during the peak hour of traffic

Minimum Design: Based on mean arrival rate, with minimum storage for one vehicle



Guidelines for Design Tapers of Left-Turn Lanes

La -- Approach Taper Design

Functional Basis: To provide a smooth lateral transition for all vehicle approaching the intersection

Form of Alignment: Tangent

<u>Desirable Design</u>: Provide a fully shadowed lane $(W_s > W_l)$. Recommended for high speed intersections and intersections in rural and open urban areas with no space constraints.

For speeds 45 mph or under:
$$T_a = \frac{W_1 S^2}{60}$$

For speeds over 45 mph: $T_a = W_1 S$

Minimum Design: A 10:1 taper ratio should be used

L_b -- Bay Taper Design

Functional Basis: To direct left-turning vehicle into the turn lane

Form of Alignment: Tangent; or reverse curves with 1/3 of the total length comprised of a central tangent

Desirable Design: For fully shadowed left turn lane

$$T_{b} = \frac{W_{I}S}{3.0}$$

Minimum Design: Taper ratios of 8:1 can be used for tangent bay tapers. For constrained locations, ratios as low as 4:1 can be used with painted channelization.

> W_{I} = Width of Lane (ft) S = Speed (mph)

See Also: Figure 4-18 & 4-19 on pages 55 - 56 of the NCHRP report 279 "Intersection Channelization Design Guide" Determining Left-Turn Lanes Signed: 1/3/2006

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DETERMINING LEFT-TURN LANES



Determining Left-Turn Lanes



Traffic Engineering Policy & Procedure



600 Temporary Traffic Control

- 610 General Information 610.1 Construction Maintenance Work Zones
- 620 Temporary Traffic Control Elements
- 630 Flagger Control

640.0 Traffic Control Devices

- 641.0 Signs
- 642.0 Channelizing Devices
- 643.0 Pavement Markings 643.1 Temporary Pavement Marking
- 644.0 Delineators & Lighting
- 645.0 Beacons & Warning Lights
- 646.0 Temporary Signals
- 647.0 Temporary Barriers & Crash Cushions 647.1 Truck Mounted Attenuator
- 648.0 Rumble Strips & Glare Screens
- 649.0 Miscellaneous & Other Traffic Control Device Information

650.0 Traffic Control Zone Activities

660.0 Typical Applications

670.0 Smart Work Zones



Policy.610.1



CONSTRUCTION & MAINTENANCE WORK AREAS

Policy 610.1 dated August 21, 2003, was replaced by Nebraska Department of Roads Operating Instruction (DOR-OI) 60-18 effective January 5, 2015.





Policy.643.1



TEMPORARY PAVEMENT MARKING

It shall be the policy of the Department of Roads to provide temporary pavement marking on all construction and maintenance projects using the following criteria:

A. Two-Lane Roadways

1. <u>Centerline</u>

Roadways with existing centerline which become removed, covered or otherwise obliterated shall be replaced with temporary broken line pavement marking prior to the completion of each day's work. Short patches of less than 200' will not require temporary centerline.

2. Edgeline

Temporary solid edgelines shall be installed on resurfacing projects each day prior to the completion of each days work, at the location called for in the plans and/or specifications. Armor coats and slurry seal projects which do not create an edgeline drop-off will not require temporary edgeline pavement marking. Edgelines typically will not be required in an urban area.

3. No Passing Zone

On roadways with ADT's of 2,000 vehicles per day or less, (present time), no passing zones shall be signed with "DO NOT PASS" (R4-1-24) and "PASS WITH CARE" (R4-2-24) signs to identify the limits of the zone. On roadways with ADT's of greater than 2,000 vpd, for short term situations of three calendar days or less, the no passing zones may be identified by signs rather than pavement markings. For periods greater than three calendar days, solid barrier lines shall be installed using temporary tape or painted line where appropriate. Where no passing zones are marked, signs R4-1-24 and R4-2-24 are not required. The existing "NO PASSING ZONE" pennant signs should remain in place at all times for above conditions.

B. Four-Lane Divided Roadways (Including Interstate)

1. <u>Centerline, Lane Lines and Edgelines</u>

All removed, covered or otherwise obliterated pavement marking shall be replaced with temporary pavement marking prior to the completion of each day's work, at the location called for in the plans and specification. Armor coats and slurry seal projects which do not create a pavement drop-off will not require temporary edgeline pavement marking. Edgelines typically will not be required in an urban area.



C. Special Conditions

- Certain conditions such as shoo-flys and crossovers may require No-Passing zone markings and edgeline markings on roadways with less than 2,000 ADT as required in the plans and/or specifications.
 When the project phasing or completion of the project will require that the temporary pavement marking material be removed, raised reflective markers or removable temporary tape should be used.
- 2. Temporary pavement marking for crosswalks, railroad crossings, stop bars, legends and arrows will not be placed during the project. The Department will install the pavement markings when work schedule and material availability permits.

D. Temporary Pavement Marking Material

The following materials may be used for temporary broken line and temporary solid line:

- 1. Temporary broken line where required shall be one of the following:
 - a. Two (2) raised reflective pavement markers at 5' intervals every 40', or two (2) raised reflective pavement markers at 2' intervals every 24' in urban areas. (Stock Numbers 85-38600, 85-38700 and 85-38725)
 - b. 4" x 2' minimum piece of temporary pavement marking tape every 40', or 4" x 2' minimum piece of temporary pavement marking tape every 24' in urban areas. (Stock Numbers 85-37800, and 85-38400)
 - c. 4" min. width by 10' length painted line with glass beads every 40', or 4"x6' painted line with glass beads every 24' in urban areas.
 - d. For Armor Coats and Slurry seals one 4" wide by 2" high reflective marker every 40' 80' may be used. (Stock Numbers 85-38500, and 85-38525)

E. Final Pavement Marking

At the earliest date practical and possible, the Department of Roads shall paint the permanent center line, lane, and edgeline pavement markings, at which time the "DO NOT PASS" and "PASS WITH CARE" signs should be removed.

For roadways with ADT's of 2,000 vehicles per day or less, the time period between completion of the work and placement of the final pavement markings shall not exceed two weeks. For roadways with ADT's greater than 2,000 vehicles per day, the time period shall not exceed three (3) calendar days.

Note: Temporary Pavement Marking Material Information Updated to meet 2000 MUTCD specifications.



Policy.647.1



TRUCK MOUNTED ATTENUATOR

Purpose:

To provide a policy for the use of Truck Mounted Attenuator (TMA) units for mobile road maintenance or construction operations on two-lane or multi-lane state roadways. It is the intent of the Nebraska Department of Roads to amend the Rules and Regulations, Title 411 dealing with the Manual on Uniform Traffic Control Devices, to allow but not require the use of TMA's with work or protection vehicles on two-lane and multi-lane roadways. Until such time as the Rules and Regulations are officially amended, the following interim policy shall be in effect:

Policy:

For mobile maintenance or construction operations on two-lane or multi-lane roadways, any work or protection vehicle **may** be fitted with an impact attenuator to safely stop or re-direct errant vehicles, except where specifically directed by the supervisor. However, the impact attenuator is not a requirement but is to be considered optional.



Traffic Engineering Policy & Procedure



700 School Zones

710 General Information

720 School Signs

- 721.0 School Advance Warning
- 722.0 School Crosswalk Warning
 - 722.1 In-Street Crossing Signs
- 723.0 School Bus Signs 723.1 School Bus Stop Ahead
- 724.0 School Speed Zones 724.0 Rural School Speed Zones
- 725.0 School Zone Signs
- 726.0 School Zone Parking & Stopping
- 729.0 Miscellaneous & Other School Sign Information

730 School Markings

- 731.0 Markings General Information
- 732.0 Crosswalk Markings
- 733.0 Stop & Yield Markings
- 734.0 Curb Markings
- 735.0 Legend & Symbol Pavement Markings
- 739.0 Miscellaneous & Other School Marking Information

740 School Zone Signals

750 School Crossing Guards

- 751.0 General Information
- 752.0 Adult Crossing Guards
- 753.0 Law Enforcement Officers
- 754.0 Student Patrols
- 759.0 Miscellaneous & Other Crossing Guard Information
- 760 Grade Separated Crossings
- 770 Safe Walk to School Program



Policy 722.1



IN-STREET CROSSING SIGNS

Statute:

State of Nebraska Statute 60-6,120 assigns jurisdiction for the placement of traffic control devices upon the state highway system. No local authority is authorized to place or maintain any traffic control device upon any state highway, except by permission of the Department of Roads.

For this reason, the Department of Roads shall have final approval of all installations of in-street crossing signs along the state highway system. All communities (including those above 40,000 in population) shall consult with the Department prior to the installation of any signs on the state highway system.

Application Criteria:

Due to the daily placement and removal requirements of the signs, only the in-street schoolchildren crossing signs are allowed. The in-street pedestrian crossing signs will not be allowed on the state highway system.

Municipalities or school districts may use in-street schoolchildren crossing signs to alert motorists of the presence of school crossings.

For locations where in-street schoolchildren crossing signs are proposed (R1-6/ S4-3P, R1-6b), the following criteria shall be satisfied:

- 1. The location in question must be on an existing school route. If the school crossing location is not obvious or intuitive, a school routes plan or other documentation shall be provided to verify the location as a school route crossing.
- The location shall be accompanied by crosswalk markings and school crossing warning sign (S1-1, W16-7P, W16-9P) assemblies. The devices themselves and the justification for their use shall comply with MUTCD guidance.
- 3. The signs shall not be used at signalized locations.

Installation & Maintenance:

If the above criteria are satisfied, the in-street schoolchildren crossing signs may be considered. However, the use of these signs is governed by the following requirements, which must be satisfied to allow for their continued use. If the local public agency cannot fulfill these requirements, the use of these signs shall no longer be allowed. These requirements are as follows:

- 1. The Department shall require the local public agency or school district to obtain a permit through the NDOR District office to install the signs. Before using, the requesting party should first contact local street or highway maintenance staff to coordinate their use. This will ensure that snow plowing or other street maintenance work does not interfere with the signs (and vice versa).
- 2. The signs shall be portable.
- 3. The signs and their use shall conform to all guidance and criteria listed in Section 2B.12 and 7B.12 of the MUTCD (size, retroreflectivity, crashworthiness, etc.).
 - a. The sign and mounting system shall conform to the most current crashworthy requirements at the time of installation, e.g. NCHRP350 or MASH.
 - b. Pursuant to State of Nebraska Statute 60-6,153, the yield version of the crossing signs shall be used (R1-6/ S4-3P and R1-6b). The STOP version (R1-6a, R1-6c) shall not be used.



In-Street Signs for School Areas



- 4. The signs shall only be used when school is in session and when school children could interact with the crossing in question. Therefore, the signs may only be placed in the roadway up to one hour before the start of school through 30 minutes after the end of school. Between these two times, the signs may be left in the roadway. However, after this time frame, the signs must be removed from the roadway. The requesting agency shall be responsible for arrangements to move the signs to and from the roadway each school day.
- 5. In compliance with federal regulations the individual(s) placing and/or removing the In-Street Sign each day shall wear ANSI Class 2 or 3 high visibility safety apparel (reflective vest).

If after a time, the local public agency can no longer fulfill the preceding requirements, the in-street pedestrian crossing warning signs shall be removed until these requirements can be satisfied. The local school district or jurisdiction shall maintain the entire sign installation. The local jurisdiction shall keep the signs in proper working condition. The Department of Roads personnel may remove or cause to be removed signs in poor condition. The Department of Roads reserves the right to remove these signs or restrict their use at any time without notification.



Policy.723.1



SCHOOL BUS STOP AHEAD

The SCHOOL BUS STOP AHEAD sign should be installed in advance of locations where a school bus, when stopped to pick up or drop off passengers, is not visible for the following distances in advance of the bus stop:

Posted Roadway Speed	Sight Distance on Grade	Sight Distance on a Downgrade	SCHOOL
(MPH)	Less than 2% (Feet)	6% or less (Feet)	AHEAD
50 - 55	500	560	
60	570	640	S3-1a
65	650	730	
70	730	830	

For downgrades greater than 6% the AASHTO "A Policy on Geometric Design of Highways and Streets" for stopping sight distance recommendation should be used.

If the sight distance is less than the above values a SCHOOL BUS STOP AHEAD sign should be installed. If the sight distance is greater than the above values then the sign should **not** be installed.

SCHOOL BUS STOP AHEAD signs will not be placed in urban areas.

The SCHOOL BUS STOP AHEAD sign shall have a standard size of 36" x 36".

It is **not** intended that these signs be used everywhere a school bus stops to pick up or drop off passengers but for use *only* where terrain and roadway features limit the approach sight distance and where there is no opportunity to relocate the stop to another location with adequate visibility. A sign should only be installed in the direction where limited sight distance exists. This sign shall not be used in locations where a school bus turns off of or on to the highway.

At the beginning of each school year, all existing SCHOOL BUS STOP AHEAD sign installations should be reviewed for continued need of signing, by the local district maintenance personnel. Signs no longer needed shall be removed.





Policy 724.0



RURAL SCHOOL SPEED ZONES

The Nebraska Department of Roads has developed the following policy that recommends specific traffic control for various rural school scenarios that serve high school aged drivers. These recommendations are accompanied by various criteria that must be satisfied before school zone traffic control can be implemented.

School zones are designated roadway segments approaching, adjacent to, and beyond school buildings or grounds, or along which school-related activities occur. These zones are established to promote safe and efficient interaction between highway and high school related traffic, for both pedestrian and drivers alike. The Manual on Uniform Traffic Control Devices (MUTCD) provides general guidance and standards for the use of all types of traffic control devices, including those used at or near schools. However, the Manual does not provide specifics for the use of these devices in every situation or scenario. This includes scenarios where rural schools abut or are located near the state highway. The following sections describe the various situations and the associated criteria to be eligible for signing.

The *general* guiding criteria for this policy are as follows:

- The MUTCD states that the use of traffic control devices must be accompanied by an engineering study which justifies their use. As a result, <u>an engineering study must be completed before the</u> <u>associated traffic control can be implemented</u>. However, the study will give significant consideration to whether the school meets the minimum criteria listed in the remaining portion of this policy. The engineering study usually considers site characteristics such as:
 - i) ADT and Peak Hour Volumes
 - ii) Origin and destination of student drivers at the study school.
 - iii) Crash History
- 2) Where equipment is prescribed in this policy, it will be the responsibility of the school or school district or local governmental agency to pay for all operational, maintenance, and power costs of said equipment. The initial capital costs of obtaining the equipment will be split 50/50 between NDOR and the school/school district or local governmental agency. To affect these things, the school or school district will first need to enter into an agreement with the NDOR that details these responsibilities.
- 3) This policy is only intended for use at schools where <u>high school aged drivers</u> regularly report. In addition, traffic control plans prescribed by this policy are only intended for use at intersections where a significant portion of the school's student driving population passes through.
- 4) For school scenarios not covered in this policy (i.e. grade schools, middle schools, urban locations, suburban locations, etc.), appropriate traffic control will be determined using guidance in the MUTCD along with an engineering study and/or engineering judgment.
- 5) This policy is only intended for application at rural unsignalized intersections.
- 6) For schools where traffic control was erected in accordance with this policy **and** that school either closes or vacates its high school aged drivers, all policy-driven traffic control devices will be removed.



7) The application of rural school zones will only be reviewed upon official request by the school or local governmental agency.

The *specific* guiding criteria for this policy cover two specific rural school zone scenarios. These scenarios are described by their access if the speed limit is 50 mph or greater. They are listed as follows:

- 1. Direct Access School entrance connects to the highway
- 2. Indirect Access School entrance is located less than ½ mile away from the highway



50 MPH OR HIGHER



50 MPH OR HIGHER



Traffic Engineering Policy & Procedure



800 Highway Railroad

- 810 General Information
- 820 Signs & Markings
- 830 Illumination
- 840 Flashing Light, Signals & Gates



Traffic Engineering Policy & Procedure



900 Bicycle Facilities

- 910 General Information
- 920 Signs
- 930 Markings
- 940 Signals


Traffic Engineering Policy & Procedure



1000 Speed & Traffic Impact Studies

1010 Minimum Criteria & Requests for Speed Changes

- 1010.1 Establishment of Speed Limits and Advisory Speeds
- 1010.2 Speed Zone Reappraisal

1020 Speed Zone Studies

1021.0 Ball Bank Indicator

1030 Traffic Impact Studies

1031.0 Land Development Review Process

Policies & Procedures Manual



Policy 1010.1



ESTABLISHMENT OF SPEED LIMITS AND ADVISORY SPEEDS

Introduction

The purpose of this policy is to provide the Nebraska Department of Roads with a basis for the consistent application of engineering principles to set maximum speed limits and the placement of advisory speeds. This policy will be used for establishing and recommending speed zones on the Nebraska State Highway System. The utilization of engineering policies and procedures in vehicle speed control should improve the traffic operation, encourage better and more uniform driving practices, and increase the safety of traffic movements. Please note, this policy is not intended for use with temporary traffic control zones such as construction zones. It is only intended for permanent speed zones. For information regarding work zone speed limits, please refer to DOR-OI 60-18.

Nebraska Law

According to Nebraska State Statute, Section 60-6,190 (1), "Whenever the Department of Roads determines, upon the basis of an engineering and traffic investigation, that any maximum speed limit is greater or less than is reasonable or safe under the conditions found to exist at any intersection, place, or part of the state highway system outside of the corporate limits of cities and villages as well as inside the corporate limits of cities and villages as well as inside the corporate limits of cities and villages on freeways which are part of the state highway system, it may determine and set a reasonable and safe maximum speed limit for such intersection, place, or part of such highway which shall be the lawful speed limit when appropriate signs giving notice thereof are erected at such intersection, place, or part of highway, except that the maximum rural and freeway limits shall not be exceeded."

For non-freeway segments within the corporate limits of cities and villages, Section 60-6, 190 (4) states that "...*incorporated cities and villages shall have the same power and duty to alter the maximum speed limits as the department if the change is based on an engineering and traffic investigation.*" However, it goes on to say that these entities may not change the posted speed limit without the approval of the Department. Please note, the language in this statute is referring to cities with populations fewer than 40,000 inhabitants. For cities 40,000 or more inhabitants, the statute states that cities shall have jurisdiction over the posted speed limit on state highways after consultation with the Department (see Section 60-6,120 (2b)).

The statutory maximum speed limits for the different types of roadways throughout Nebraska can be found in Section 60-6,186 of the Nebraska Rules of the Road. Additional information regarding speed limits can be found in Sections 60-6,185 thru 60-6,190 of the Nebraska Rules of the Road.



Speed Zone Reappraisal

As guidance, the *Manual on Uniform Traffic Control Devices* (MUTCD) states, "At least once every five years, States and local agencies should reevaluate non-statutory speed limits on segments of their roadways that have undergone a significant change in roadway characteristics or surrounding land use since the last review." These changes would include, but not be limited to: elimination of parking, addition of lanes, signal coordination, and changes in roadside development. If no significant changes have occurred within five years of a previous study, then the amount of time between studies will be determined by the Traffic Engineering Division on a case-by-case basis.

When requested, a speed zone reappraisal may be conducted by the Nebraska Department to determine if the current speed limits are appropriate. All requests will be forwarded to the Traffic Engineering Division, who is the Office of Primary Responsibility for these requests. The Traffic Engineering Division, with the help of other divisions (if deemed necessary), will perform the engineering study of the highway segment in question.

Alternatively, governing bodies of cities and villages may have their own traffic engineering study performed for non-freeway facilities within their corporate limits to determine if the current speed limit is still appropriate. These studies must be conducted in the same or similar manner to those used by the NDOR and formal approval from NDOR is required before any changes are granted.

Engineering and Traffic Study

If the maximum speed limit is changed, the new limit shall be established on the basis of an engineering and traffic study performed or approved by the Traffic Engineering Division. At a minimum, the engineering study shall include an analysis of the current speed distribution of free-flowing vehicles. The speed limit within a speed zone should be set to the nearest 5 MPH increment to the 85th percentile speed or the upper limit of the 10 MPH pace speed of free-flowing vehicles. Lastly, the study should adhere to practices found in the *ITE Traffic Control Device Handbook* and/or *ITE Manual of Transportation Engineering Studies.* It shall also adhere to guidance found in the MUTCD. This includes requirements that the engineering study be performed by a licensed professional engineer or under the direct supervision of a licensed professional engineer.

Other factors that may be considered when establishing speed limits include, but are not limited to, the following:

- 1. Roadway geometry including: vertical and horizontal alignment, and sight distance;
- 2. Roadside development, including location and number of access points;
- 3. Road and shoulder characteristics;
- 4. Pedestrian and bicycle activity;
- 5. Speed limits on adjoining highway segments;
- 6. Crash experience;
- 7. Traffic volume and composition, traffic control, and parking practices;
- 8. Design speed of the roadway.



When considering a highway segment for a 65 MPH speed limit, the existing roadway shall have a minimum surfaced shoulder width of six feet, and/or be designated on the State's Priority Commercial System. Other highway segments, not part of the Priority Commercial System, with a narrower or no surfaced shoulder may be considered for a 65 MPH speed limit when recommended by an engineering study and approved by the Deputy Director of Engineering. When applicable, the beginning and end of a speed zone should be placed at a logical terminus. These termini should be, but are not limited to: highway junctions, changing land use, and changes in highway cross-sections.

Advisory Speeds

Advisory speeds should be used to inform motorists of isolated roadway conditions that may require operating speeds which are lower than the posted speed limit. This could include conditions related to stopping sight distance and design geometry. The determination of whether a road segment or feature, such as a curve, requires an advisory speed should be accomplished through a review of roadway geometry. If used, the appropriate warning signs and/or advisory plaques shall be in compliance with the State of Nebraska's Supplement to the Manual on Uniform Traffic Control Devices adopted by the Nebraska Department of Roads. The following bullets provide specific guidance on when to consider the use of advisory speed signs.

- Horizontal Curves: Advisory speed plaques should be used whenever the differential between the advisory speed and the posted speed limit is 5 mph or greater. Ball bank studies should be performed in accordance with Procedure 1021. Additional guidance can be found in Section 2C.08 of the 2009 MUTCD. In the absence of a ball bank study, the design speed of the curve may be used to determine whether an advisory speed plaque is recommended.
- Vertical Curves: Advisory speed signs may be used where there is insufficient sight distance (intersection or stopping sight distance) for intersections that are located downstream of a crest vertical curve. This does not include residential driveways and/or field entrances. Lastly, advisory speed signs should only be used when the difference in posted speed and speed related to the available sight distance equals or exceeds 10 mph.



Policies & Procedures Manual

Procedure.1010.2



SPEED ZONE REAPPRAISAL

A speed study is initiated by request, or upon completion of a highway improvement project per Traffic Engineering Procedure 1010.1, or as needed per Section 2B.13 of the MUTCD. The following are guidelines to the Speed Zone Appraisal process with some variation depending on circumstance:

- 1. Assistant Traffic Engineer assigns the work to an Analyst.
- 2. Existing speed zone documents are reviewed.
- 3. Data collection is scheduled, collected in the field, and then downloaded to speed software for statistical analysis. This yields 85th percentile speed, upper limit, 10 mph pace, average speed, etc., which should be compared to previously collected statistical results when available.
- 4. Land use, crash history, new speed data, etc. are considered and the need for a change in the speed limits is evaluated by the Analyst.
 - If a change is not needed, the process is completed and documents are filed.
 - If a change is needed, the process continues.
- 5. The speed and sign plats are prepared:

These two plats coexist in one Microstation file. The signing is shown on level 10. This level is toggled off for the speed plat.

Data is added to the speed plat using the symbols shown in the legend to indicate the speed, location, and date.

The corporate boundaries are investigated, to see whether or not the boundaries have changed since the previous speed zone plat was produced.

On the plat, an asterisk is used to indicate speed zones outside the corporate limits. A number is used to indicate adjacent speed zone authorizations in effect.

Signs are depicted with symbols on level 10. The sign size is per TEP 212.2. A capital X represents an R2-1-30 speed limit sign. A filled circle represents an R2-1-24 speed limit sign. A diamond represents a W3-5-36 speed reduction sign. (Larger signs are used on expressways and freeways. (ref TEP 212.2 and MUTCD table 2B-1)). A legend is used to define the sign symbology.



Reference post locations are added to indicate where the speed limit change is to occur. The reference locations are found in the Highway Reference Log Book, the Urban Reference Log Book, or by manually calculating distances using either of these log books as references.

The speed zone change location should be referenced to an existing street or dimensioned to a street. The description of the zone should be recommended to the governing body to be included in a speed zone ordinance or resolution. The ordinance or resolution number and a copy of the document is made part of the authorization for inside the corporate limits.

The speed limit values are placed in the area of the sign symbols. The numbers are oriented to be read in the direction of travel. For example, a speed limit number for the southbound direction in a plat where north is at the top of the page, is rotated upside down. Likewise, a speed limit for westbound traffic is rotated 90 degrees, and for eastbound traffic 270 degrees.

On county plats, specific sign locations are not explicitly shown; the speed zone limits are specified with reference post locations thus inferring the sign locations. NDOR maintenance forces are instructed via Traffic Engineering Procedure 212.1 to install additional rural signs.

Sign frequency is significantly higher in the corporate area environment, typically recurring every several blocks. Videolog should be reviewed, or an on-site visit made, to ascertain all current and valid signing locations are captured in the sign plat. Signs are required at the speed zone boundaries, at corporate limits, at departures from major intersections, on the departing legs of highway junctions, and at county lines (ref MUTCD Section 2B.18).

When a speed zone is changed on an established plat, the plat is often redone, so multiple plats for the same area can be eliminated. The preferred scale is 1'' = 1000'. The preferred size for a plat is letter size, as that is easier to store in the plat books. Other paper size can be used when necessary for larger corporate or spur plats. In those instances, the final paper print is folded to fit in the plat books.

The drafting conventions used include a line weight of 12 and line style of 3 for the speed zone trapezoid lines. The color red is typically reserved for level 10, signing and dimensions that locate the signs.

The speed plat shall include the engineer's stamp. In Microstation, the stamp is placed on a level that can be toggled off, so it does not appear on the signing plat. The engineer's seal is made not visible. A note is to be placed in the bottom right corner of the title block boundary reading "Original Approved by" and date.



 There are two types of authorization forms, one for "Inside Corporate Area" and the other "Outside Corporate Area". Blank forms can be found on the server at traffic on \\Dorimage1 \Traffic

Old forms that say "Determination and Declaration", or "Authorization" and make reference to outdated state statutes should be replaced when a new study or project is completed. All superseded declarations and authorizations should be noted on the new plat.

Speed authorizations for locations inside or outside corporate areas are typically written in a manner that not only addresses the changes for specific locations, but also renews all other locations. Example: One zone inside, or outside, the corporate limits is changed from 45 to 35 mph, and two other zones inside, or outside, the corporate limits are not to be changed. Regardless of this, all three areas are included in the authorization. This practice facilitates historical review by reinitializing the established limits with each release. The number of current plats is kept to a minimum, essentially two, i.e. one outside of corporate limits, and one inside corporate limits (at least for the smaller cities).

Also, when reviewing an authorization, one should look for zones that, when established were outside of corporate limits, but are now inside due to boundary changes. Those zones would need to be included in the new speed zone ordinance as well as the new authorization for inside the corporate limits. Thus, the new authorization will be accurate with the current set of circumstances and will correct errors that may exist in the current authorization.

The speed authorization must have a unique number assigned. A number is assigned from the speed authorization number database Excel file located on \\Dorimage1\Traffic\Speed Zone Authorization\SZA Number Record.xls. Enter the appropriate information into the Excel database fields.

- 7. Speed Authorization is prepared and plats are checked.
- 8. Corrections are made to the Speed Authorizations and plats before they continue through the sequence.
- 9. The speed plat is stamped by a licensed engineer.
- 10. The Analyst requests the signatures for the State Traffic Engineer and the NDOR Director. A note of explanation is included for their review along with the authorization and plats if needed.



- 11. Upon return of the signed authorization and plat, correspondence is prepared for distribution of the speed zone authorization. They are distributed to the following entities:
 - City or Village Clerk
- District Operations & Maintenance Manager
- County Sheriff
- Area Maintenance Superintendent
- State Patrol
- District Traffic Engineer (D-5 through D-8)
- District Engineer
- Office (3): Job File 1 copy; County File 1 copy; Administrative Assistant original
- 12. The Analyst or Engineer prepares an Action Report and a more detailed speed plat with sign locations to go with the Area Maintenance Superintendent copy.
- 13. District Maintenance forces install the signs.
- 14. The Area Maintenance Superintendent returns the Action Report with the completion date filled in.
- 15. The speed zone authorization and plats are scanned into pdf files for inclusion in the Falcon document management system. Those scanned files in Falcon are only adjusted to fit a good view as a pdf. Sometimes they need to be shrunk down proportionately, or split into separate sheets for viewing purposes.

For read-access of plats and authorizations, open Falcon, go to "Environments", click on "Traffic Details", open "Speed Zone" Folder, and scroll down to the County Name folder. If the authorization isn't listed under the County folder it may be found in the Corporate area folder.

Once an authorization is approved, the Falcon "current" files are updated per the Microstation plat.

The Microstation plat (.dgn) is saved on the Traffic server (T:\te03\city_speed for city plats, and at T:\te03\cnty_speed for county plats). These files are write-accessible only to Traffic Engineering.

16. The current authorizations are kept accessible to Traffic Engineering in the files of the Traffic Engineering Administrative Assistant. The Administrative Assistant marks "Superseded" on the superseded authorization. Falcon files are moved from "current" location to the "Superseded County" or "Superseded City" folder as appropriate. The new authorization number is written onto the superseded authorization in both the county file cabinet and the signing 3-ring binder.

The correspondence files are kept in the same areas as the plat files. On their initiative, hard copies are be kept by the Analyst and P.E.



The completed action report is filed with the speed plat original, in case it ever becomes necessary to retrieve the date of the actual installation of signing.

The Analyst or Engineer adds the date of sign installation (from the completed action report) to the SZA number record.

The Speed Software files are saved to the server. These are accessible only to Traffic Engineering-Lincoln and the District Traffic Engineer.

- 17. The Microstation dgn files of old computer plats are not retained. Only the latest editions are kept on the server. The plats are saved to T:\te03\city_speed for city plats, and at T:\te03 \cnty_speed for county plats.
- 18. The junction signing plans should be checked against the speed zone plats, to detect any inconsistencies, and to determine if the junction signing plan requires revision.

See pages 6 and 7 for Speed Zone Reappraisal Flowchart Summary and Tracking Sheet.

Speed Zone Reappraisal

Procedure.1010.2



Speed Zone Reappraisal

Signed: 11/14/2006 Page 6 of 7



Speed Zone Reappraisal Tracking Sheet

		To Be Completed			By:
Date Completed	Action	Traffic Analyst	Admin. Assistant	Traffic Technician	Assistant TE or District TE
	Speed Study Initialized and Assigned				Х
	Review Existing Speed Zone Documents	Х			
	Data Collection Assigned	Х			
	Data Collection Completed and Downloaded			Х	
	Run Speed Software and Analyze. Speed Software Results Filed. All Completed. (End of procedure if no change is needed)	Х			
	Speed Plat Prepared and Save Plat Microstation File to Server			Х	
	Speed Authorization Number Logged and Speed Authorization Completed	Х			
	Plat and Authorization Checked	Х			
	PE Signed Plat	Х			
	Submitted for Executive Approval	Х			
	Executive Approval Completed	Х			
	Action Report Issued	Х			
	Distribution Completed		Х		
	Documents Scanned, Falcon Database Updated, and Superseded Documents Marked and Filed		Х		
	Signs Installed, Action Report Returned Completed, Sign Install Date Noted on SZA Spreadsheet and Action Report Sent to File	Х			
	Junction Signing Plan Checked Against Speed Plats			Х	



Policies & Procedures Manual

Procedure.1021



BALL-BANK INDICATOR OR SLOPEMETER

A ball-bank indicator is used for the measurement of lateral acceleration to set speeds on curves that avoid driver discomfort.

The 2003 Edition of the MUTCD* indicates in modern vehicles the 85th percentile speed on horizontal curves yields an approximate ball-bank reading of 16 degrees*. The MUTCD's statement is made without stipulation relative to speed.

AASHTO^{**} refers to several tests which, in contrast to the MUTCD, specify ball-bank and accelerometer readings relative to speed. These are less than the 2003 MUTCD support value.

The values shown below shall be applied in NDOR Traffic Engineering testing:

Trial Run Speed (mph)	Ball-bank reading (deg)
<= 20	14
25 and 30	12
>=35	10

After completing multiple successful trials, the correct advisory speed limit should be installed using current MUTCD signing guidance.

* Ref MUTCD, 2003 Ed. section 2C.36

** AASHTO A Policy On Geometric Design of Highways and Streets 2004, pgs 134-135.



Policies & Procedures Manual





LAND DEVELOPMENT REVIEW PROCESS



Land Development Review Process



Traffic Engineering Policy & Procedure



1100 Attachments

- **1110 Cost of Highway Crashes** 1110.0 Cost of Highway Crashes
- 1120 NE Statute Information Summary for Speed Zoning

1130 Forms for Copying & Use by Districts/Divisions

Annual Visual Night Time Inspection: DR FORM 192 Construction/Maintenance Work Zone: Speed Zone Authorization Construction/Maintenance Work Zone: Log of Work Area Speed Zones



Policies & Procedures Manual

Procedure.1110.0



COST OF HIGHWAY CRASHES

The Department has adopted the FHWA values for crash costs. The FHWA base values are presented in Publication No. FHWA-RD-91-055, "The Cost of Highway Crashes", October 1991. The 1991 values are adjusted periodically for inflation. The most recent adjusted values are attached to this memo. The Highway Safety Section Manager is responsible for keeping up the adjusted FHWA cost values.

For consistency, these values should be used with any analytical tool, including the Roadside Analysis software (RSAP), Highway Safety Manual (HSM), or other crash data analysis tools

SOCIETAL COSTS OF NEBRASKA TRAFFIC ACCIDENTS **REVISED SEPTEMBER 30, 2013**

Fatal Accident	\$4,541,200	
A-Injury Accident	\$381,250	
B-Injury Accident	\$80,620	
C-Injury Accident	\$42,080	
All Types Combined Injury Accident	\$116,080	
Property Damage Accident	\$7,490	
MULTI-VEHICLE ACCIDENTS	URBAN	RURAL
Right Angle Collision	\$48,100	\$238,400
Rearend Collision	32,000	81,100
Sideswipe (Same Direction)	23,100	76,300
Sideswipe (Opposite Direction)	55,100	280,800
Head-on Collision	105,600	1,120,800
Left-turn Collision	59,800	156,600
Other Collision	15,300	20,000
SINGLE VEHICLE ACCIDENTS	URBAN	RURAL
Collision with Train	\$482,600	\$551,700
Collision with Pedestrian	203,200	702,600
Collision with Bicycle	117,100	515,200
Collision with Animal	14,500	17,800
Collision with Parked Vehicle	17,900	50,000
Collision with Fixed Object	69,500	120,500
Overturn	202,400	222,500
Other Single Vehicle Accident	45,300	47,000

Sources: Federal Highway Administration Research Report Number, FHWA-RD-91-055, The Cost of Highway Crashes, 'October 1991; Nebraska Department of Roads Accident Data 2007-2009; Adjusted to January 2013 costs using the Gross Domestic 'Product (GDP) Implicit Price Deflator, U.S. Department of Commerce, Bureau of Economic Analysis (2013).

Nebraska Department of Roads Highway Signing Visual Nighttime Inspection Form

Highway:	R.P.:	to R.P.:
Date:	Start Time:	End Time:
Inspection Driver:	Inspection Recorder:	

Signs Which Need Replaced:

Highway	Location/R.P.	Sign ID	Replacement Date

All signs in the above referenced highway segment PASSED Visual Nighttime Inspection.

Sign replacement should be completed in a timely manner!

Maintenance Supervisor:

Maintenance Superintendent:

cc: District Office

DR Form 192, Oct 05

Date Completed:

Log of Work Area Speed Zones

								Divided
		- ·		_				<u>Highways</u>
Dete	Highway	Speed	Referen	ce Post	L C	Tim	le	Direction
Date	NO.	Limit	From	10	Location	Start	End	of I ravel
						am	pm	
						am	pm	
						am	pm	
						am	pm	
						am	pm_	
						am	pm	
						am	pm	
						am	pm_	
						am	pm	
						am	pm_	
						am	pm_	
						am	pm_	
						am	pm_	
						am	pm	
						am	pm_	
						am	pm	

Notes: If special remarks or comments are necessary for a particular speed zone, use an extra line.

The direction of travel is needed only if work is being performed on one side of a divided highway.

(Signature)



Speed Zone Authorization

Department of Roads

Pursuant to the authority contained in Section 60-6,188 Reissue Revised Statutes of Nebraska, and in accordance with Authorization No. ______ issued on August 21, 2003 by the Director-State Department of Roads, the maximum speed limit of 35 miles per hour in a rural area, or 25 miles per hour in an urban area through highway maintenance, repair or construction zones on the portion of the state highway system, has been increased as set forth below. Highway No.: ______ Location: _______

Ref. Post: ______ to Ref. Post: ______

Project No. (if applicable):

The **prima facie** speed limit shall be increased from _____ miles per hour to _____ miles per hour, this increase maintains the same posted speed limit as the speed limit prior to work for the entire length of the work zone, and will be in effect 24 hours a day, except as changed below.

The following **prima facie** speed limit for sections of the work zone shall be increased from ______ miles per hour to the speed shown below, and shall be in effect only when standard signs giving notice thereof are installed as provided by law, for the lengths and time periods as set forth below.

Work Zone Section One:	Miles Per Hour Act	tivity:	
Transistion Speed Zone Requ	ired (y/n) if Yes, Tran	sistion Speed Zone =	Miles Per Hour.
Stationary	Sta. or	Tor	
(Longer than 3-Days)	Kel. Post:	10	
	Starting Date:	Ending Date:	
24 Hours (y/n) 0	or Daily, Start Time:	End Time:	
Non-Stationary Ac (Less than 3-Days)	tual Starting and Ending Loca documented in a daily l	tions, Dates and Times will b og.	e
Work Zone Section Two:	Miles Per Hour Ac	tivity:	
Transistion Speed Zone Requ	ired (y/n) if Yes, Tran	sistion Speed Zone =	Miles Per Hour.
Stationary	Sta. or		
(Longer than 3-Days)	Ref. Post:	To:	
	Starting Date:	Ending Date:	
24 Hours (y/n)	or Daily, Start Time:	End Time:	
Non-Stationary Ac	tual Starting and Ending Loca	tions, Dates and Times will b	e
(Less than 3-Days)	documented in a daily l	og.	
Authorizing Authority (signat	ure)	Title	Date
Distance			
cc: District Office Nebraska State F	atrol		
County Sheriff	uu vi		



Traffic Engineering Policy & Procedure



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